A SPIRITED DEBATE ABOUT THE MAYA

FALL 1995

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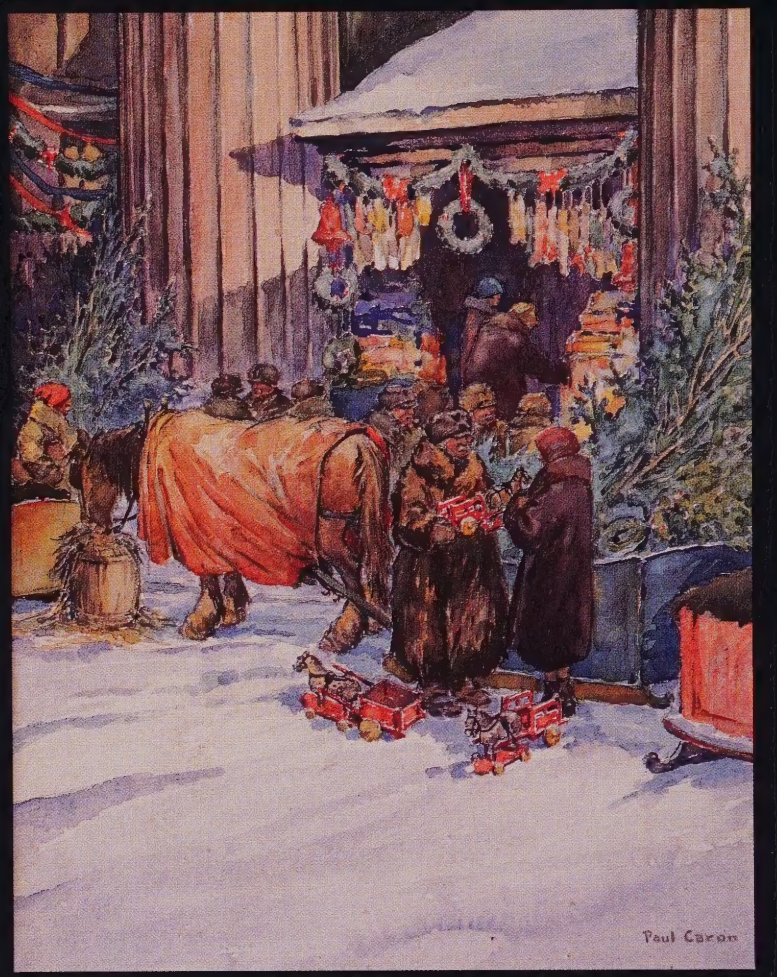


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*the magazine of the Royal Ontario Museum*

*Volume 28, Number 2, Fall 1995*
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Gunlocks in the ROM's collection of arms and armour display a passion for artistry and technical innovation. To learn more about gunlocks turn to page 10.
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# EDITOR'S NOTE

When I was a child, one of my favourite places at the ROM was the Armour Court. Not that I was particularly interested in weaponry or suits of armour, but I adored the decoration on the many guns and helmets. So it was with special delight that I found Corey Keeble of the European Department researching the Museum's collection of gunlocks. A gunlock is the ignition system of a gun, and the Museum's pieces, which span about 300 years, display a fascinating combination of technology and artistry. The locks were primarily for sporting guns, objects created mostly for show. Keeble's cover story explains the technical development of locks and reveals their often masterful engraving and sculpture.

In her article, archaeologist Elizabeth Graham questions the accuracy of commonly held theories that the Maya did not convert wholeheartedly to Catholicism but rather professed faith as was necessary to appease the Spanish conquerors. Such theories are based, in part, on the surviving documentation of Spanish clergy. For Graham the issue ultimately focuses on the practice of rituals and each culture's interpretation of the other's spiritual world. In her opinion the Maya were probably sincere in their devotion to Catholicism. As she points out, the Spanish clergy expected the Maya to embrace Christianity in 100 years in a way that took Europeans more than a 1000 years.

Ken Barbour and Jock McAndrews of the ROM's Botany Department write about their combined efforts with staff from the National Herbarium of Trinidad and Tobago at the University of the West Indies, Trinidad, to reconstruct the modern vegetation history of Grenada and to document the present flora by collecting specimens. From the data they produce studies can be conducted with applications that will be useful in Grenada and beyond. The tropics are the Earth's regions of greatest biodiversity. As a result, damage to the flora of these regions can have global consequences. Grenada, the southernmost island in the Lesser Antilles of the Caribbean, has been subjected in recent decades to damaging natural phenomena. Of greater potential impact, however, are the expansion of agricultural and forestry activities and a developing tourist trade. Its remarkably small area is home to five distinct plant communities, making it an ideal place to conduct research.

And on the subject of exotic flora, one of the unexpected yields of the forest-clearing efforts in Upper Canada in the 18th and 19th centuries was figured maple. Such wood has naturally developed unusual grain patterns, commonly referred to as bird's-eye and curly. These naturally figured woods were difficult to work with—totally impractical for factory production—but could be used to make extremely attractive and valuable pieces of furniture. Don Webster of the Canadiana Department notes in his article about the furniture that Upper Canada was one of the leading producers of these highly desirable items in the first half of the 19th century.

I hope that you will read this issue of *Rotunda* lock, stock, and barrel, and that you will take the opportunity when you next visit the ROM to view the Museum's gunlocks and Upper Canadian maple.

Sandra Shaul

SANDRA SHAUL


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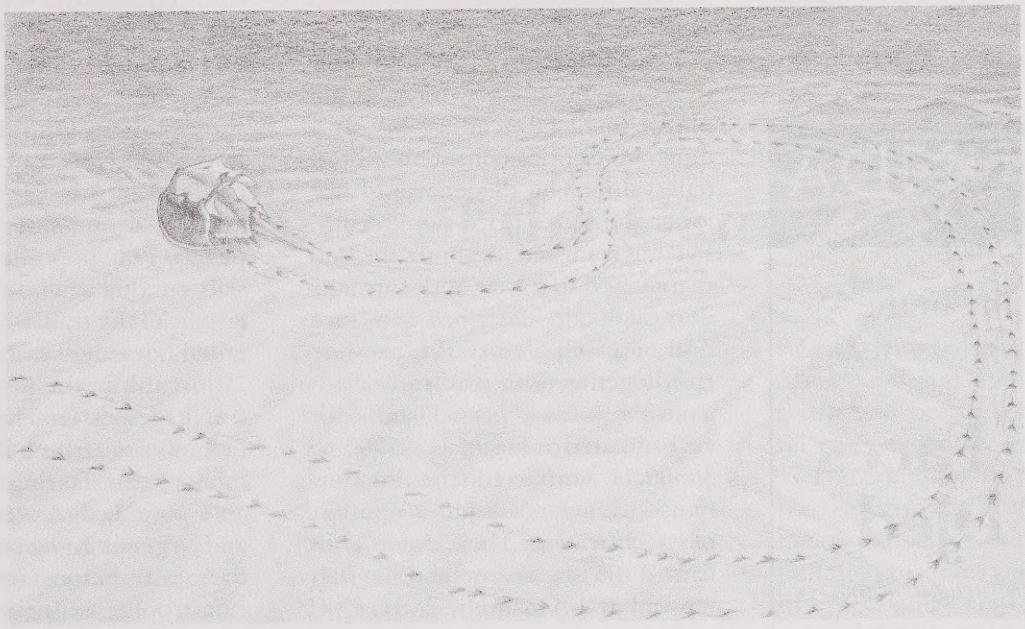

PHOTOGRAPH BY BRIAN BOYLE/ILLUSTRATION BY MARIANNE COLLINS

***A fossil shows the negative imprint of a horseshoe crab in a "death spiral" 150 million years ago. Bottom: An artist's conception of the event.***

**Unhappy Trails: Death 150 Million Years Ago and Chicanery Today**

The most famous fossils in the world are probably those of the first bird, *Archaeopteryx*, from the 150-million-year-old Solnhofen limestone of southern Germany. Bearing both feathered wings and jaws full of reptilian teeth, the seven known specimens of *Archaeopteryx* are unequivocal evidence of the evolution of birds from reptiles.

Also remarkable in the Solnhofen limestone are the remains of juvenile horseshoe crabs found dead in their tracks. A few of these tracks wander in the famous "death spiral" associated with a person dying of thirst in the desert. Such fossils of animal behaviour are extremely rare in the geological record. I have seen three examples for sale in 25 years, and only one exhibited the death spiral.

In February 1994, a fossil dealer at the Rock and Mineral Show in Tucson called to say that he had two horseshoe crab death trails to sell

on consignment for a German vendor. Another museum had already expressed interest in the more expensive one, which had the dead crab at the end of a circular trail. The second slab was of a horseshoe crab at the end of a straight trail set in a "frame" of limestone laid on top. Being straight and composite, this trail was only half the price of the first. Bob Gait from the ROM's Mineralogy Department, who was in Tucson attending the show, confirmed that both slabs were of display quality.

A generous grant from the ROM Reproductions Fund of The Royal Ontario Museum Foundation was used to purchase the composite slab, and it arrived at the ROM in May of last year. It is a striking specimen with a clear set of tracks and tail drag marks, ending in an unusually dark horseshoe crab. Initially my colleagues and I were pleased with it. However, I thought it remarkable that the tail drag marks ended exactly at the tip of the tail, with no sign of movement just before death.

On close examination, it was evident that the tail was not real, but had been carved in the rock, along with spines at the rear of the crab. Under ultraviolet light, a bright glue line could be seen to run around the body of the horseshoe crab, between it and the tail and rear spines. We therefore concluded that this was not the fossil of a horseshoe crab that had died in its tracks 150 million years ago, but rather a careful fabrication created from two separate Solnhofen fossils. Someone had taken a moderately preserved Solnhofen horseshoe crab lacking a tail and rear spines and inset it at the end of a trackway; they had then carved the tail at the end of the trackway and the spines at the rear of the crab to complete the connection, and finally had inset the trackway and crab in the overlying frame.

I called the dealer with an offer to acquire the trackway as an example of fossil fabrication, but at a much lower price consistent with its true value. The dealer would not lower the slab's price significantly, so it was returned. Recently, the slab reappeared in a New York City auction catalogue, described as a "rare find of a well-preserved horseshoe crab together with its own tracks... from the Jurassic period" and with an estimated value of US$5500 to $6500. I contacted the auction house with the Museum's opinion of its fabrication. Their expert confirmed the assessment, and the slab was withdrawn from the auction.

After the return of the fabricated slab, the dealer called to say that the other museum had been unable to raise the funds for the first slab, which contained the crab at the end of a circular trail. I expressed cautious interest, requesting photographs of the slab, including some of the horseshoe crab under ultraviolet light. With funds still available plus an additional grant from the Reproductions Fund, I drove to Indiana last March to pick up the slab. Before accepting it, however, I examined it carefully in both daylight and ultraviolet light to confirm that the horseshoe crab and its death trail were genuine.

The conditions in which the horseshoe crab died have now been determined. One hundred and fifty million years ago, the southern part of Germany lay in a subtropical, semi-arid climate, with the Solnhofen area covered by a shallow marine lagoon. There was a low-lying landmass to the north, barrier coral reefs to the south, and sponge mounds in the lagoon, so seawater circulation in the lagoon was restricted. The stagnation caused by poor water circulation, combined with high salinity caused by evaporation, created conditions that could not support life. A juvenile horseshoe crab washed over the reefs into the lagoon, probably during a storm, would have slowly become disoriented as it wandered along the sea floor, eventually dying at the end of its trail.

The slab acquired by the ROM shows this in graphic detail. The horseshoe crab trail curves across one end of the slab, exiting at the middle of one side. The trail appears on the opposite corner of the slab, curving again to join the earlier part of the trail, where the disoriented horseshoe crab finally died.

Just think: the last moments of this horseshoe crab have been petrified in stone, frozen in time for 150 million years. During this inconceivable period, dinosaurs, pterosaurs, and large sea-going reptiles reached their peak before succumbing to a catastrophic extinction 65 million years ago; mammals evolved rapidly to take their place on land, in the air, and in the sea; and a series of severe ice ages took place. Now, for the first time since its demise so long ago, the disorientation and death of that young horseshoe crab are seen and contemplated.

DESMOND COLLINS
*Desmond Collins is a curator in the Invertebrate Palaeontology Department, Royal Ontario Museum*

ROTUNDA
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Coming in the November issue...

**The Faces of Djed**

*An intriguing look at the life of an ancient Egyptian revealed through modern technology*

By Lee-Anne Jack

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# Name of the Game

YOU DON'T REALLY UNDERSTAND THE expression "only game in town" until you've travelled Tibet on a diet of yak. I was fed roast yak, barbecued yak, wok-fried yak, spicy Szechwan yak, curried yak, and inevitably, yak burgers. Only the latter failed to lift the dentures from the heads of my elderly companions.

Still, my penchant for game—for something wild (or at least the illusion of something wild)—remained. I recall fondly the grilled kangaroo steak on a menu at Alice Springs in the Australian Outback. The kangaroo, raised on a game farm near Adelaide, was like a cross between venison and veal, dark and rich in flavour, and free of the bugaboos of fat and cholesterol. It came sauced in witchetty grubs, which the Aborigines dig out from the roots of gum trees and eat raw. At my hotel, the chef sautéed them. They tasted like macadamia nuts. I wanted to get rich by importing them to Canada.

Gazelles and zebras dancing across Nairobi menus makes environmental sense, argues conservationist and rancher Dr. David Hopcraft. If you want to save the animals in Africa, he says, you had better prove their worth to Africans. This "conservation through utilization," Hopcraft believes, is the *only* way the game will survive Africa's economic crunch and the swallowing up of land by the world's fastest-growing population.

Canadians, so endowed with wilderness and wildlife, have traditionally cherished the notion of game as something especially ours. Consult the *Northern Cookbook* published by the Department of Indian Affairs and you'll find recipes for grizzly bear, beaver, porcupine, squirrel, and—sublimely—baked skunk.

The contemporary game enthusiast can skip the skunk. Now game meats and birds such as venison, buffalo, pheasant, and quail, bereft of fats and cholesterol, have emerged as gastro-correct icons for the health-obsessed 1990s.

Pheasant seems to me an aristocratic bird best eaten by people in knee-stockings and powdered wigs. Unlike the Spaniards, most of us are not prepared to let it hang until it rots to get the flavour right (and they do get it right). This leaves us with a bland bird of infuriating sensitivity: if you don't baste it frantically or gussy it up with bacon, it emerges from the oven tough and

ILLUSTRATION BY WESLEY BATES

tasteless, as Toronto restaurateurs know only too well.

There is something primitively satisfying about having a whole bird to yourself. That is why I prefer quail. Its detractors may claim it was invented by Napoleon—nothing there but Bony-parts—but that was before the jumbo quail. The "jumbo" is that 20 per cent of birds that happen to grow up oversized. The flesh of such a bird is dark and delicate, meaty and succulent, yet substantially less fatty than chicken. It is easy to roast or grill.

Venison is the darling of with-it menus, and little wonder: it is not only delicious, but also lowest in fat except any game meat but buffalo. A 100-gram portion of venison contains only 25 mg of cholesterol, while the same portions of pork shoulder, roast beef, and chicken contain approximately 100, 70, and 90 grams of the deadly stuff respectively.

Buffalo is another matter. *Larousse Gastronomique* describes bison in brine as a "typical Canadian dish" (sure it is, we all grew up on it). Chefs either love it or hate it because of its unpredictable flavour. Certainly it needs help, usually in the form of a wine-based marinade. I haven't come across the curious hybrid of beef and buffalo called beefalo, but it does exist. Nor has wild boar captured the public imagination, probably because it seems scant improvement over a pork chop.

Play the game with confidence. It was not always so. I remember several years ago, before I travelled to Tibet, when an innovative shop sold Ontario-farmed Tibetan yak at its game counter. Of course, I rushed out and bought some. I took no chances. I tenderized it in red wine and herbs for two days. I grilled it ever so cautiously. The yak sizzled magnificently in a charcoal haze. My guests drooled. They began. They surrendered a few minutes later.

It was an *experience*, I explained to my dentist the next morning, an *experience*. Excavating my mangled choppers, he wouldn't stop laughing. The following recipes are low-risk and tasty.

## ROAST LOIN OF VENISON WITH WOODLAND AND MEADOW MUSHROOMS AND JUNIPER SAUCE

*A venison recipe that gives new meaning to "fair game."*

### Ingredients

- 1 loin venison, approx. 675 g (1 - 1/2 lb), rinsed and patted dry
- game marinade (see below)
- 450 g (1 lb) oyster mushrooms
- 225 g (1/2 lb) shiitake mushrooms
- 15 g (1/2 oz) dried morels
- 250 ml (1 cup) rich veal or chicken stock
- 15 ml (1 tbsp) butter
- 20 ml (4 tsp) flour
- 16 juniper berries
- 115 g (4 oz) butter
- 50 ml (2 oz) gin

### Method

Let the venison sit in the marinade, refrigerated, for six to 24 hours. Carefully clean the oyster and shiitake mushrooms by brushing away dirt with a fine, soft brush. Separate the stem from the caps. Soak the morels in water for 5 minutes, then rinse under running water for several more minutes to remove sand. Slice crosswise into 0.5-cm (1/4-inch) slices and set aside.

Remove the venison from the marinade. Pour the marinade into a medium pot. Add the mushroom stems and the stock. Cook the marinade at a low boil until it is reduced almost by half. Strain it through a fine sieve. Press the solids with the back of a spoon to extract as much juice as possible. There should be about 500 ml (two cups) of liquid.

Melt 15 ml (1 tbsp) butter in a pot. Stir in flour until well combined. Add the marinade, juniper berries, and morels. Bring the mixture to a boil, reduce the heat and simmer for 15 minutes.

Sear the venison over a hot grill. Reduce the heat to medium (about 160°C or 325°F in a closed barbecue), and cook for another 5 to 6 minutes, turning several times. (Alternatively, sear the venison on all sides in a small amount of butter in a hot fry pan and roast 5 to 6 minutes in a preheated 160°C (325°F) oven). For tenderness and flavour, the meat should be medium rare. Remove from the grill or oven. Cover lightly with foil and allow to rest 10 minutes.

Melt 30 g (1 ounce) butter in a large, heavy fry pan. Fry half of the shiitake mushroom caps over medium-high heat until golden. Remove from the heat and keep warm. Repeat using the remaining butter and remaining oyster and shiitake mushroom caps.

When all the mushrooms have been browned, deglaze the pan with the gin. Then pour the gin into the juniper-and-marinade sauce.

To serve, slice the venison into 0.5-cm (1/4-inch) thick slices. Arrange on the plate with the oyster and shiitake mushrooms. Spoon a little sauce over the venison and serve the rest in a sauce boat. Serves four.

## GAME MARINADE

### Ingredients

- 70 gm (1/2 cup) chopped carrot
- 70 gm (1/2 cup) chopped onion
- 2 cloves garlic, chopped
- 8 juniper berries
- 2.5 ml (1/2 tsp) black peppercorns, cracked
- 60 ml (1/4 cup) olive oil
- 500 ml (2 cups) dry red wine
- 60 ml (1/4 cup) balsamic vinegar
- 5 ml (1 tsp) fresh rosemary
- 4 sprigs parsley

### Method

This is a good, all-purpose marinade for venison, buffalo, and other game. Use a medium-size, heavy-bottom pot. Sauté the carrot, onion, garlic, juniper berries, and peppercorns in olive oil over a medium heat for 5 minutes. Remove from the heat. Add the wine, vinegar, rosemary, and parsley. Return to the heat and simmer for 15 minutes. Remove from heat and cool to room temperature.

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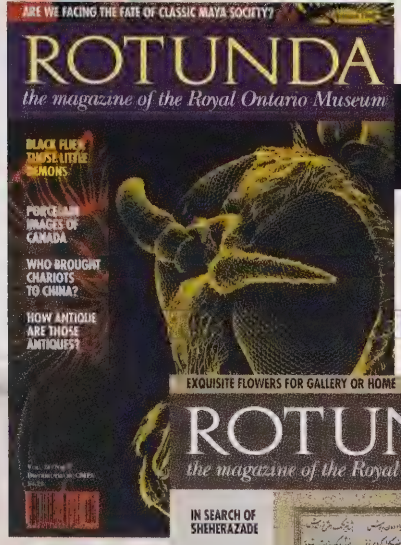
JEREMY FERGUSON
*Jeremy Ferguson writes about food and travel*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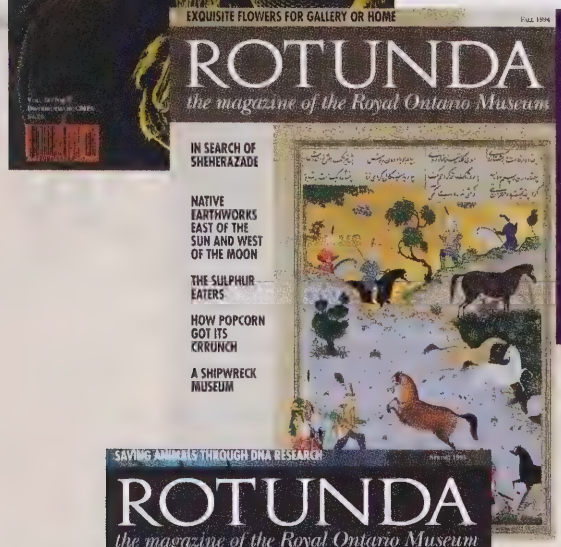
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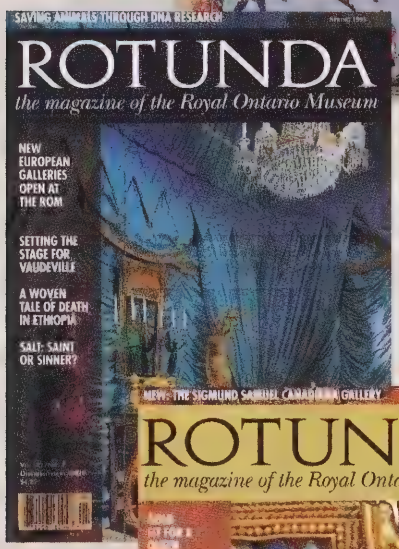
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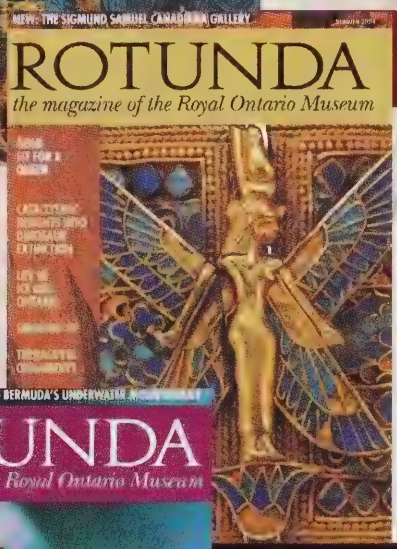


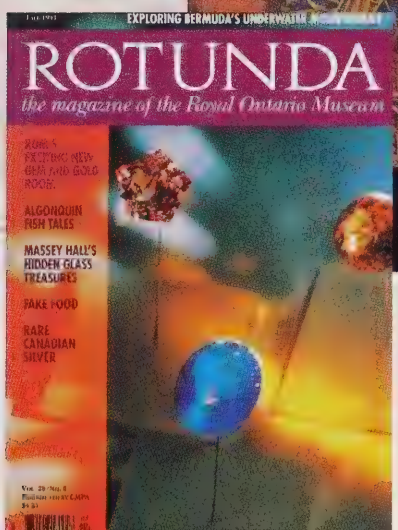


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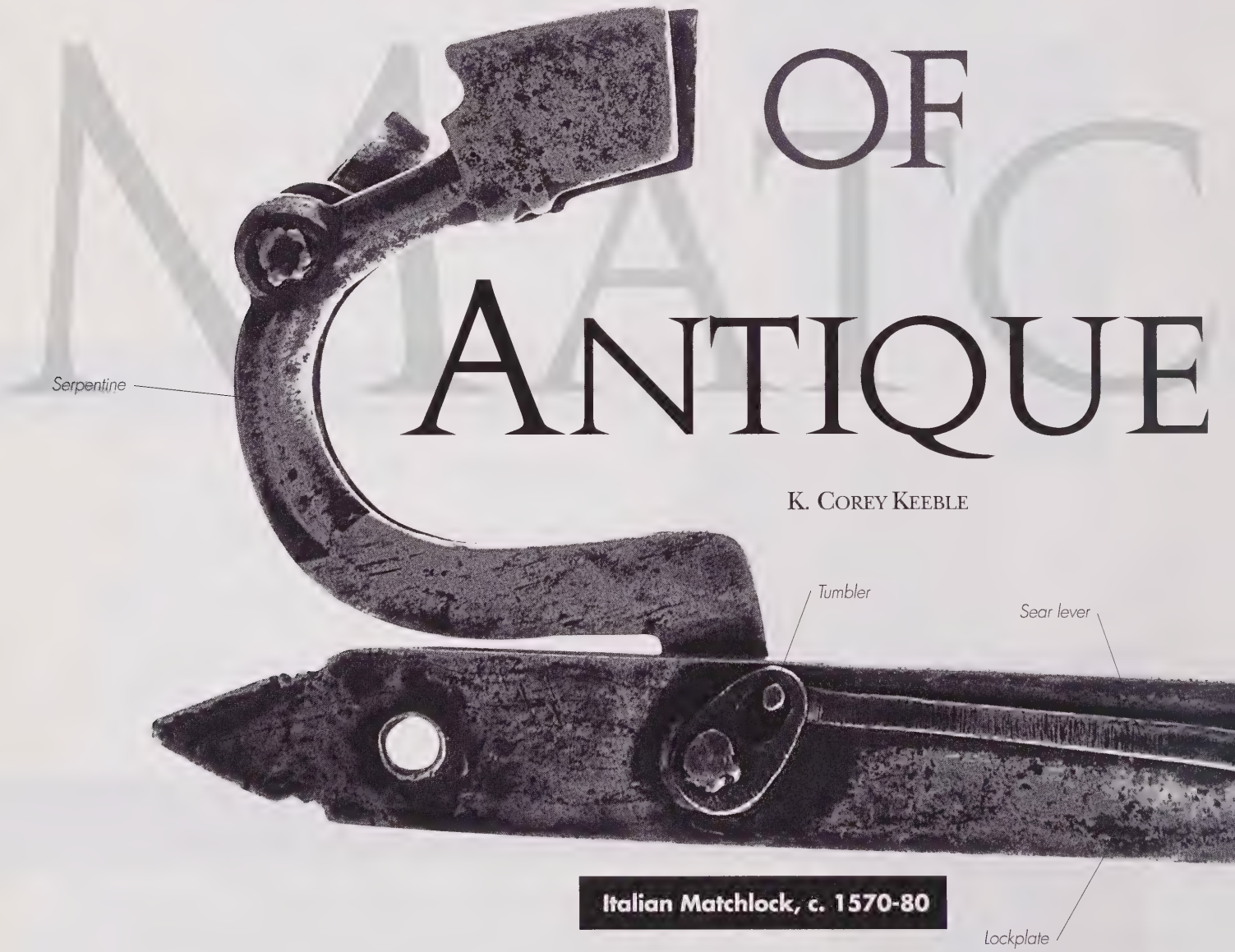
# The Science and Beauty of Antique

*Antique gunlocks display a passion for artistry and technical innovation*

K. Corey Keeble




**Italian Matchlock, c. 1570-80**

The matchlock was the earliest European gunlock. A rudimentary form was in use by the early 1400s and more sophisticated versions were applied to military firearms well into the 1600s.

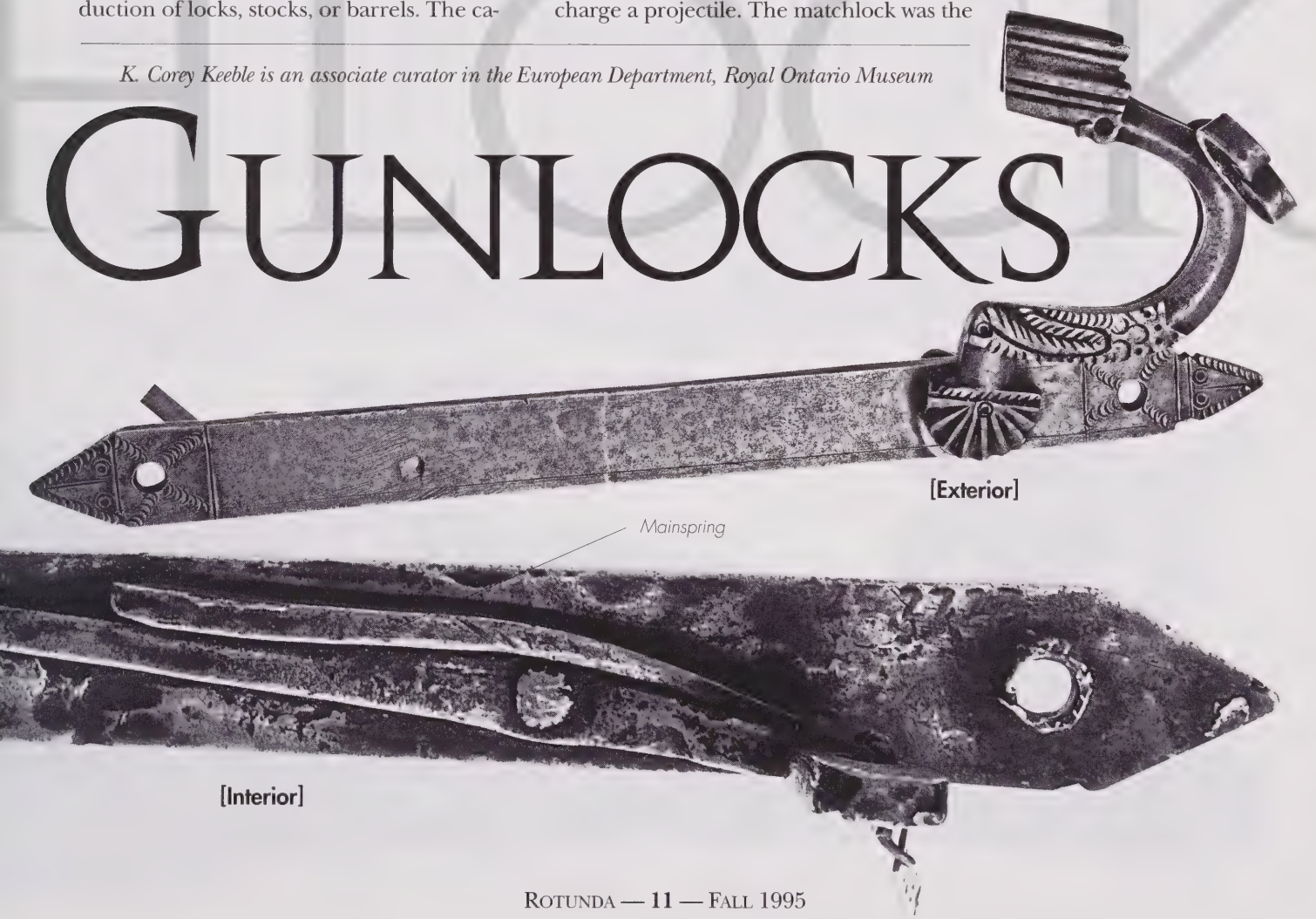
# GUNLOCKS

*K. Corey Keeble is an associate curator in the European Department, Royal Ontario Museum*

ALTHOUGH IT MAY NOT BE OBVIOUS from modern usage, the common expression "lock, stock, and barrel" is actually a reference to handmade firearms. From the mid 16th century to the present time, sporting firearms have been made that display both extraordinary artistry in their decoration and technical innovation in their design. Originally, such guns were prestigious examples of the contemporary passions for complex metalworking and scientific and technological discoveries, and were created through the combined efforts of artisans specializing in the production of locks, stocks, or barrels. The cachet of owning these guns continued until the Industrial Revolution, when efficient and less decorative, machine-made, mass-produced products significantly changed the role and status of firearms.

The complexity and artistry of ornate firearms can be appreciated in the Royal Ontario Museum's collection of gunlocks, the majority of which came from the Herbert J. Jackson collection in 1925. Through the ROM's collection the development of European gunlocks from the mid-1550s to the early 1800s can be documented.

Gunlocks are mechanical devices for igniting the powder in a gun barrel to discharge a projectile. The matchlock was the



**Immaculately handcrafted interior working parts of wheel-locks are as sophisticated in form and technique as those of fine clocks and watches**

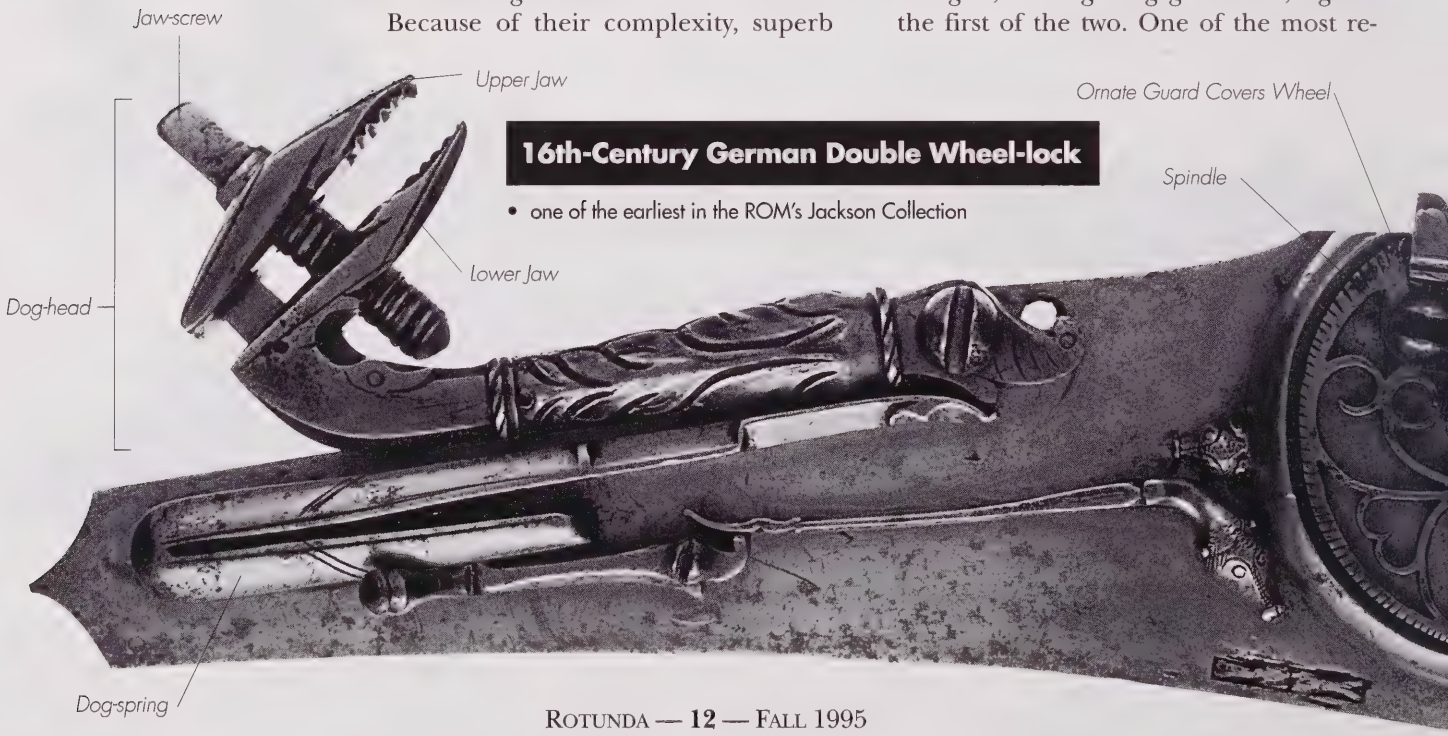
earliest European gunlock. A rudimentary form was in use by the early 1400s and more sophisticated versions were applied to military firearms well into the 1600s. There is one matchlock in the Jackson collection that dates from about 1570 to 1580 and was probably made in Italy. A pivoted, sickle-shaped "serpentine" split at the top of the exterior of the lock was designed to hold a length of smouldering cord or match. Trigger pressure on an internal lever caused the elegantly contoured serpentine to dip downwards, thereby tipping the lighted match into priming powder in a pan attached to either the gun barrel, as in the case of the Jackson piece, or to the lockplate.

Wheel-locks followed matchlocks, appearing by the beginning of the 1500s. They worked on the principle of a powder charge ignited by the friction created from a rapidly rotating wheel rubbing against a piece of iron pyrite. The wheel, mounted on a spindle, was powered through a clever system of toggle, chain, and mainspring. The pyrite was held between the screw-operated jaws of a pivoted dog or cock and the priming pan was covered by a movable pan cover. For firing, the dog was bent by hand so that the edge of the pyrite rested against the top of the pan cover and was held there by the pressure of an external-dog-spring. Release of the mainspring (by a trigger) caused the wheel to rotate and the pan cover to open automatically so that the pyrite pressed directly against the wheel to spark the priming powder in the pan. This in turn ignited the main charge in the barrel.

Because of their complexity, superb craftsmanship, beauty, and costly materials, wheel-locks had a special appeal to the nobility. While some wheel-lock guns were made for military purposes, they were primarily for use in sporting activities and as symbols of prestige and rank. Emperor Charles V not only collected wheel-lock guns in the 1530s and 1540s but also individual wheel-locks.

German, Italian, and Dutch wheel-locks are a rich part of the Museum's Jackson collection. While many of them are lavishly decorated with chiselling and engraving, the immaculately handcrafted interior working parts show a sophistication of form and a technical finesse equal to that of the workings of fine clocks and watches. One of the earliest pieces in the collection features two dog-heads. While the contours of the lockplate are close to early German examples of the 1530s, the decoration and interior details are in keeping with a date of 1560 to 1590. The face of the wheel has a pierced cover with delicately filed symmetrical scrolls, and the dog-heads have baluster shafts with lightly filed cabled mouldings and boldly chiselled acanthus-leaf ornament.

Two other splendid German examples, both designed for sporting guns and dating from the early 1700s, combine mechanical ingenuity with high-quality engraving and chiselled decoration. The decoration reflects the shift from late baroque to rococo style. Georg Drausmiller, a Munich gunsmith, and Johann Christoph Stenglin, an Augsburg goldsmith, signed the first of the two. One of the most re-




**16th-Century German Double Wheel-lock**

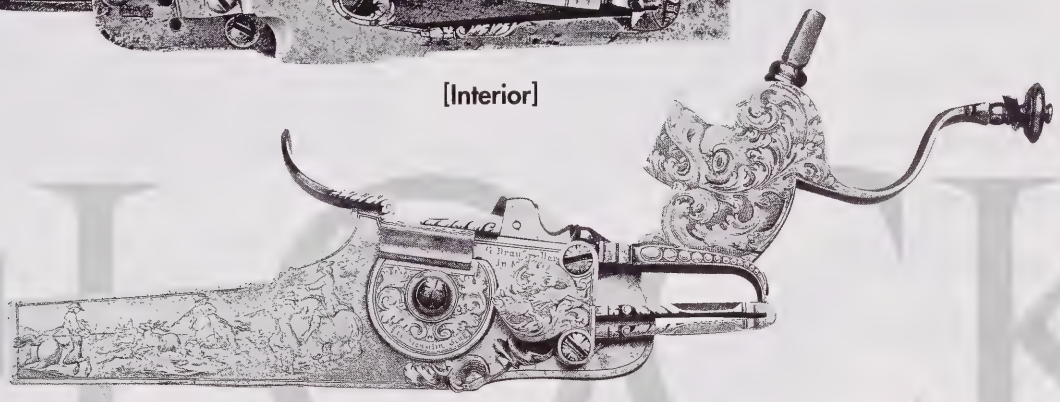
- one of the earliest in the ROM's Jackson Collection

Wheel-locks followed matchlocks, appearing by the beginning of the 1500s. They worked on the principle of a powder charge ignited by the friction created from a rapidly rotating wheel rubbing against a piece of iron pyrite.

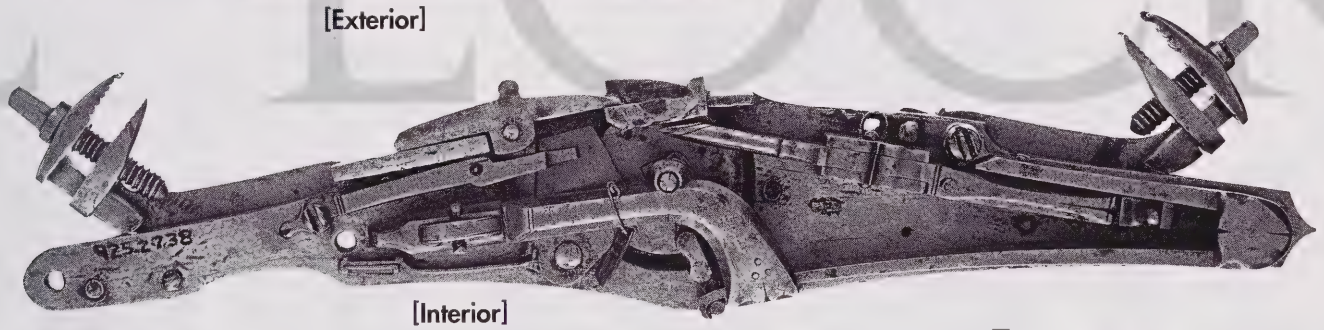
**18th-Century German Wheel-lock**

- signed by Georg Drausmiller, a Munich gunsmith and Johann Christoph Stenglin, an Augsburg goldsmith

[Interior]



[Exterior]



[Interior]

[Exterior]

**The most outstanding feature of Matassi's snaphance lock is miniature sculptures of masks that appear unexpectedly as the lock is turned**

markable details of its decoration is the hunting scene engraved on the tail of the lockplate. On the second gun, the lockplate is also decorated with a spirited hunting scene, composed of a rider, spear-bearing trumpeter, hounds rushing through trees in hot pursuit of bounding stags, and one felled stag.

Some time before 1550 a new form of gunlock, the snaphance, appeared in Europe. It used the rapid striking action of a shaped piece of flint against a curved "steel," to produce the spark needed to ignite the powder in the priming pan. Possibly as early as the 1580s, some gunsmiths had devised a new form of steel that incorporated the pan cover. This new combination was L-shaped in profile and pivoted at the front.

On snaphance locks a pivoted cock was snapped forward against the steel by the pressure of a mainspring. The cock was drawn back against the pressure of the spring and held in place by one or two laterally moving spring-operated sears inside the lock. On some locks the sears protruded externally through holes in the lockplate to hold the cock in position. In others, they engaged inside the lockplate against notches or bents cut into a tumbler mounted on the cock-pivot. Pulling a trigger caused the sear or sears to retract, releasing the cock so that the pressure of the mainspring caused it to snap forwards, the flint in its jaws striking sparks against the pivoted steel over the powder-pan.

In the early 1600s, an improved form of snaphance lock appeared in France. It featured a single sear that engaged vertically against notches or bents in the edges of the tumbler mounted on the cock-pivot inside the lockplate for half-cock (safety) and full-cock positions. Many modern scholars reserve the term flintlock for this improved gunlock that combined the features of an L-shaped steel/pan cover and internal vertically operating sear.

Snaphances are remarkable for their regional variety. Some of the Italian snaphances in the Jackson collection display superior sculptural chiselling, such as an example with separate steel and pan cover from the 18th century, signed by Romano Matassi of Anghiari. While the entire piece is intricately decorated with faces and foliage, its most outstanding feature is miniature sculptures of masks that appear unexpectedly when the lock is viewed from different angles.

There are also some interesting hybrid flintlocks in the collection, including one signed "Kayten Dasch in Gratz." Its lockplate is close in profile to those on sporting wheel-locks of the 18th century, and the cock, which is in the same position as the dog-head of a wheel-lock gun, is placed inside the lockplate. The ignition system is, however, more like that of a flintlock, although internally the lock departs from

**18th-Century Italian Snaphance lock**

- signed by Romano Matassi of Anghiari

The snaphance lock appeared sometime before 1550. It used the rapid striking action of a shaped piece of flint against a curved "steel," to produce the spark needed to ignite the powder in the priming pan.

**19th-Century Hybrid Flintlock**

- signed "Kayten Dasch in Gratz"

[Interior]

[Exterior]

[Exterior]

**Gunlocks are masterpieces of fine metalwork that neatly synthesize art and technology**

the construction of conventional flintlocks by having a rod that extends downwards to exert pressure on the mainspring when the lock is cocked. Because of its unusual design and its decoration, which stylistically seem to predate Dasch (active 1800-1840), many questions are raised about this piece.

In the early 1800s the flintlock was superceded by the percussion lock. An early step in the evolution of the percussion system of ignition is represented by an English lock assembly made by William Moore (1780-1847), court gunsmith to King William IV from 1836. It is from the left side of a double-barrelled sporting gun and is one of two locks by the same maker and presumably from the same gun. (The second one is in a private collection.) A fine example of a "tubelock," it uses a small copper tube inserted laterally into a touchhole in the gun barrel and held in place by a pivoted clamp and a small anvil. The tube contained fulminate, an explosive salt, that was detonated by the screwdriver-like blade on the tip of a spring-operated hammer. The hammer was fitted with a curved oval guard to prevent the escape of gas from the open end of the tube and to contain fragments if the tube fractured.

For nearly 200 years, from the time of Giuliano Bossi's experiments in Italy in the 1620s, the explosive qualities of fulminates were known. During the 18th century, various attempts were made in England and France to replace gunpowder with fulminates; however, the fulminates proved to be uncontrollably volatile. Finally, in 1805, Alexander John Forsyth (1768-1843), a Scottish clergyman, developed a percussion lock. Other forms of percussion locks followed, including one by Joseph Manton who in 1818 patented the system employed in the handsome Moore lock.

The Royal Ontario Museum's gunlocks are compelling in terms of their artistry; they are masterpieces of fine metalwork that neatly synthesize art and technology. As such, they are integral parts of the history of European sculpture, metalwork, graphic arts, and technology for several hundred years. ❦

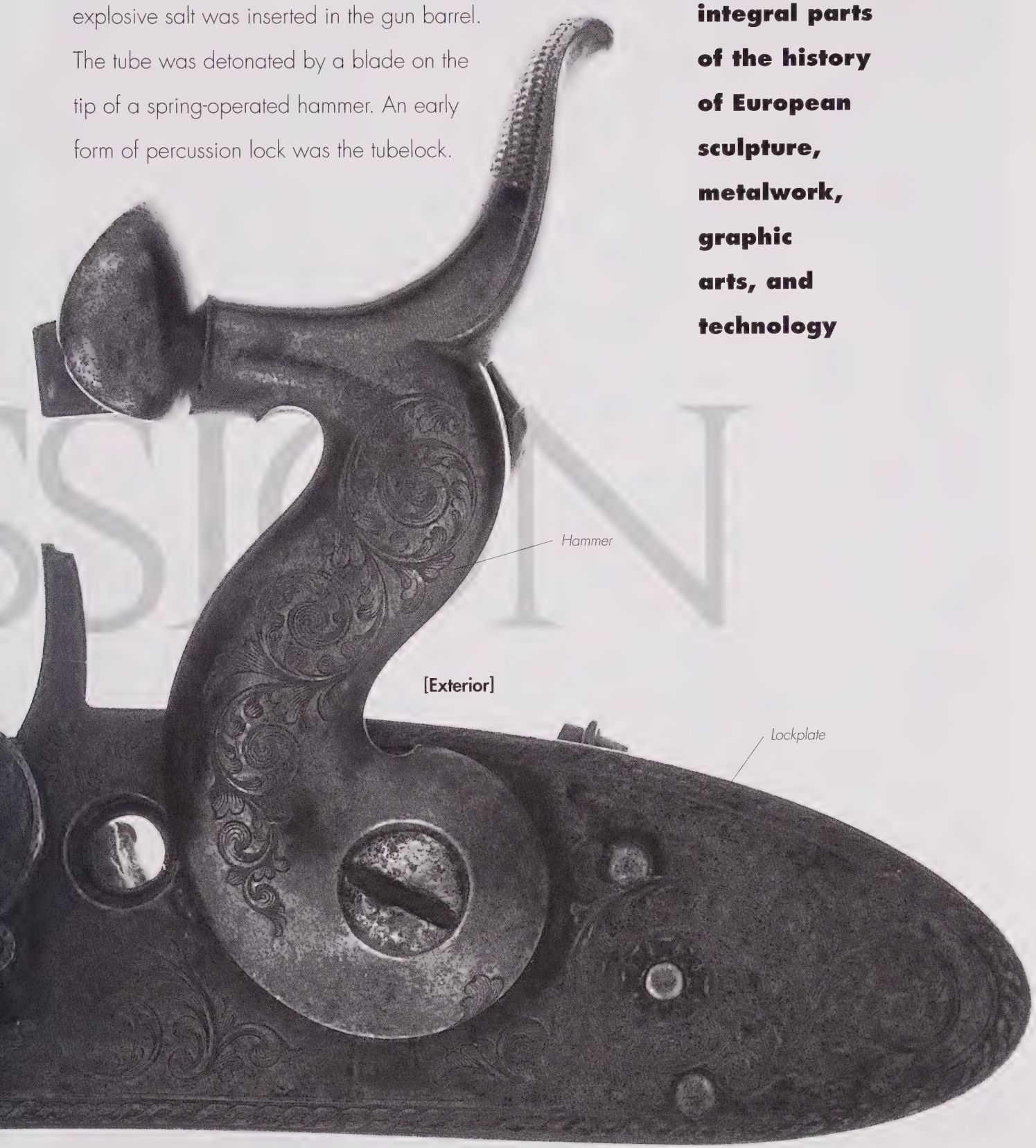
[Interior]

**Early 19th-Century English Tubelock**

- made by William Moore

The percussion lock superceded the flintlock in the early 1800s. A copper tube containing an explosive salt was inserted in the gun barrel. The tube was detonated by a blade on the tip of a spring-operated hammer. An early form of percussion lock was the tubelock.

**Gunlocks are integral parts of the history of European sculpture, metalwork, graphic arts, and technology**




[Exterior]

# A SPIRITED DEBATE

*Why did the Maya convert to Catholicism?*

ELIZABETH GRAHAM

IN 1638, A WIDESPREAD REBELLION UNITED MAYA COMMUNITIES IN THE AREA OF WHAT IS now known as Belize. Spanish political and religious authorities were driven from the region, and Maya towns and villages operated independently for almost 60 years until 1695, when the town of Tipu in western Belize decided to send representatives to Merida, in Yucatan, to renew contact with the Spaniards.

The Spanish account of the rebellion depicts the Maya as apostate. But the Maya's commitment to Christianity was not as feeble as the Spaniards claimed. At Tipu, where I directed archaeological excavations from 1984 to 1987, the dead continued to be buried according to Christian practice both within and around the community's church even *after* the church walls collapsed, a phenomenon which suggests that the rebellion did not lessen the importance of Christian ritual in Maya life.

At the time, this discovery surprised me, because I had not anticipated that Christian practice would persist in the face of rejection of Spanish rule. I had taken the colonial narratives at face value and believed that the Maya had deliberately deceived Spanish priests by pretending to accept Christianity while they secretly adhered to "pagan" ways. Archaeologists widely accept a variant of this interpretation in which the Maya adherence to Christianity is perceived as a veneer over a solid body of pre-Columbian belief. In this view, the Maya's form of Christianity was a political disguise for their resistance to Spanish rule.

There is little doubt that attempts were made to adhere to long-held beliefs in the face of the Spaniards' colonial policy of radical change; but by the 17th century many Maya had been Christians for decades, and many children had been born and had grown to adulthood within a Maya Christian tradition. Christianity for the Maya was arguably far more than either deception or a cover for political resistance, both of which views assume that conversion was insincere. Proof of insincerity, for the Spanish clergy at least, came from the nature of popular practice. In the Old World as well as in the New, the early spread of Christianity was documented by

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ILLUSTRATION BY TRACY WALKER

Saint Dominic, a 12th-century Spanish priest and founder of the Dominican Order, is usually portrayed with a dog carrying a flaming stick.

clerics who were concerned to establish what was acceptable—and what wasn't—in popular practice. When practices were condemned, it was not because they had been weighed carefully against expectations of sincerity or spiritual fufilment, but rather because they developed outside the official framework of the church.

A good example of such documentation in the New World is Bishop Landa's indictment of the Sotuta (Maya) Indians in 1562, which took place long before the rebellion in Belize but during a time of mounting opposition to Spanish rule. Landa was one of a number of early bishops of Yucatan who took pains both to record many aspects of Maya culture but also to burn most of the indigenous literature. The bishop had no doubt that the Maya rejected the Christian God and

*. . . have held for little the things of our Holy Catholic Faith, they have gone against it preaching within the churches the false sect of the devil and things of idolatries as they were used and accustomed to do in the time of their heathen past, bringing to the church . . . the idols and devils they have, that they adore and have adored until now.*

The "idols" were without doubt foreign to the bishop, and there were certainly many Maya who adamantly opposed Christianity, but it did not necessarily follow that all Maya rituals in churches were rebellious acts. There is another interpretation —unsettling for the clergy, no doubt, but nonetheless valid—namely, that the Christian Maya had come to accept the church as a sacred place appropriate for ritual.

**Although the Spaniards attributed complexity to their own religious images and read them metaphorically, they interpreted Maya imagery literally**

As in the spread of Christianity among Europeans, the acceptance of new beliefs did not always mean the abandonment of traditional rituals. Even today, there is latitude for local or even individual interpretation of many small-scale rituals in churches.

While I do not presume to know what the Maya were thinking, I believe that conversion may have been a deeper and more lasting experience than the Spaniards claimed. My perspective, however, comes not through scholarly inquiry so much as through what could be called a spiritual experience.

Once the excavations at Tipu had drawn to a close, the various analyses of the artifacts began. I needed to learn more about objects used in church ritual in the New World, and in the process of reading 16th- and 17th-century manuals of Christian doctrine for the instruction of the Indians, I slowly began to realize that the descriptions I was reading of what had been taught to the Maya, the Aztecs, and other New World peoples matched what I myself had been taught as a child. The sacraments and their ministration, the detailed descriptions of the throne of God, the angels and archangels, the tiers of heaven, and the flames of hell were all familiar. I felt myself pulled from a world of scholarly objectivity to one filled with angels and demons that I had become familiar with in a small room in the basement of St. Michael's church in Paterson, New Jersey, where I was taught what seems now to have been a wholly mediaeval brand of Catholicism.

We children at St. Mike's were riveted to Catholicism, but not necessarily by our devotion to Christian doctrine. One way the nuns and priests held our fascination

was through carefully timed resort to innumerable hidden, bottomless pockets in the folds of their robes, from which they pulled the sacred objects that were our rewards for learning the catechism. There were holy pictures with glittery trim, saints and angels with golden haloes, silver medallions, glass rosary beads, and even the occasional baseball. Reconsidering Tipu, my thoughts drifted from the realm of archaeological inquiry to wondering whether the Maya knew about pockets before the Christians came. Were the Maya children of Tipu as fascinated with the pockets of the devout and their treasures as we were?

We loved the religious objects that the nuns and priests gave us as prizes for learning the catechism, and when my thoughts turned to Tipu again, I remembered that it was the children who were buried with the most elaborate adornments. Venetian glass-bead necklaces are the most common, but there are also glass-bead bracelets, silver earrings, and sometimes jet pendants and other compound oddments, all European in origin. I suspected at first that these items were obtained through native trade networks that were known to extend to Yucatan, and this is a possibility. But there is no pre-Columbian precedent for children to be more elaborately adorned in death than adults. Burial goods generally reflect social status or the afterlife transition, not age.

**Supernaturals that combine human and animal characteristics were common to both Maya and Christian imagery, and much proselytizing was based on imagery**

Given the apparent absence of precedent, combined with information from Spanish documents that priests concentrated religious instruction on children, I wondered if the beads and other jewellery were not given to the children by priests as rewards for learning the catechism. Unfortunately, the documents describe only gifts presented to converting adults—mirrors and needles for example. Rosary beads were awarded to *caciques* or town heads, but up to now I have found no record of the nature of children's "prizes."

This Maya goddess is portrayed with a dog.

In any case, the possibility of having shared an experience with the Maya children of Tipu prompted me to focus on the conversion process in new ways. I began to shed my objective persona and started thinking less about religion as politics (my academic side) or about what sorts of Christians the Spaniards claimed the Maya were (my Eurocentric side) and more about how Christianity may have appeared to the Maya.

Early Maya converts could have found much about Christianity easy to interpret. Supernaturals that combine human and animal characteristics were common to both Maya and Christian imagery, and much proselytizing was based on imagery. In the Christian tradition, angels are commonly shown as human-like androgynous creatures with wings, and although I like to think the wings are real, I know they are meant to communicate the spiritual essence of ethereal beings who can transport themselves through time or space at will.

The most intimidating human-animal figures in the Christian tradition are Satan and the demons of hell, whose representations display much local variation. The image of the devil my grandmother brought from Italy is a malevolent airborne creature with bat-like

wings and leathery skin, whereas in eastern Europe the devil often has goat-like hooves and horns. These depictions are probably a mixture of pre-Christian imagery with Christian readings of "pagan" imagery in which animal figures were interpreted literally. That is, animal figures were not seen to stand for characteristics such as strength or weakness or speed but literally to be the animals themselves, so that they represented nothing other than false gods (demons) created by Satan. Some animal images, as vestiges of "pagan" ignorance, were then assigned to represent the devil in Christian iconography.

**As in the Christian tradition, animal characteristics in the Maya tradition may communicate a particular propensity such as the strength of a jaguar**

Outside of angels and demons, Christian imagery is largely anthropomorphic. However, animals play an important role in Christian tradition. Some saints were said to live with animals, or to have been attended by wild animals. St. Francis's life and relationship with animals is well known. Numerous saints are depicted along with an animal that has come to be part and parcel of their saintly symbolism.

It is true that anyone not long initiated into the Christian faith might be hard pressed to know in some circumstances whether animals or people are the objects of reverence. The traditional Christmas crèche scene includes statues or images of the Christ child, Mary, Joseph, and the three kings as well as images of an ox, sheep, donkey, and sometimes a bird hovering above the stable door. Animals in this scene may have an important role, but the Christmas story centres on people. Such stories and those of the lives of saints have deep and instructive meaning for Christians. Representations of objects, clothing, buildings, vegetation, and animals serve as mnemonic devices to remind people—especially those in the past who could not read—of the historic or mythic details of particular stories. Other representations, such as haloes, are not tangible objects but are meant to symbolize a state of purity and holiness. Such a wealth of imagery is complex, multi-dimensional, and meant to be read at different levels.

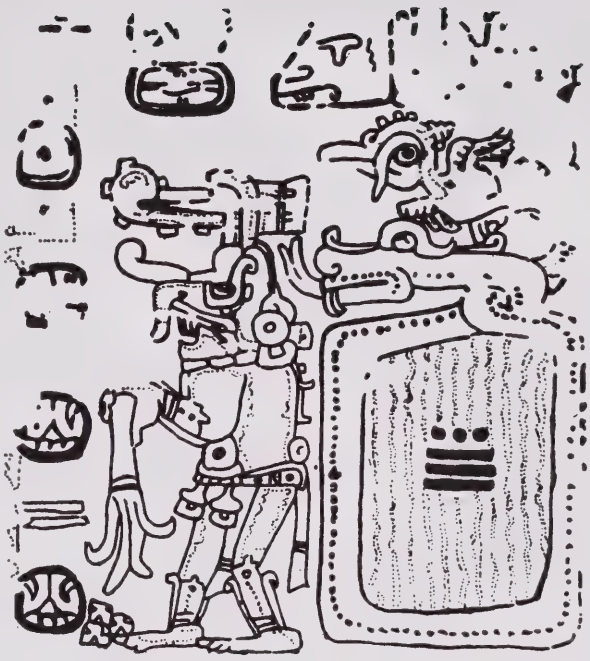
The Maya waterlily jaguar

Although the Spaniards attributed complexity to their own religious images and read them metaphorically, they interpreted Maya imagery literally. If one applied the same simple logic to the crèche scene as the Spanish priests applied to Maya imagery, then the ox, sheep, donkey, and bird would be gods. To the Spaniards, Maya effigies (idols) were exotic and unfamiliar; they could only be representations of demons, and therefore evil. To the Maya, good and bad were two faces of the same cosmic coin, so that the idea of an inherently evil object, or even a "demon," was foreign to them. Confusion must have reigned when the Spaniards, following in the tradition of the Christianization of Europe, made any imagery that was pre-Christian, no matter what its significance, the work of the devil, a logic that must have perplexed even the most eager convert. It is ironic indeed that the Spanish Christians gave tacit support to the Maya spirit world in general not by denying that Maya supernaturals existed but by regarding them as demons. With this sort of approach, one can understand that the Maya believed they had the option to disagree on details even if they could readily accept the overall message of Christianity.

If one considers that in many cultural traditions

animal and human characteristics were often combined not to depict bizarre creatures but to communicate an idea, then much of Maya imagery becomes less perplexing to the uninitiated, even if specific meanings continue to be elusive. In the way that birds' wings in the Christian tradition communicate spirituality, so may animal characteristics in the Maya communicate a particular propensity—the strength of a jaguar, the agility of a monkey, or the danger of a snake. Like Christian imagery, Maya images were meant to be read symbolically and metaphorically, and probably also served as mnemonic devices for stories about the real or mythical past.

It is clear that, effective as the use of imagery was in facilitating conversion, the images themselves provided a fertile source for a proliferation of tremendously conflicting messages. Maya and Christian imagery both comprise a rich repertoire of symbols, but interpretation relies on specific histories known only to the culturally initiated. The Spaniards ignored this and made assumptions about Maya imagery that made little sense to converts. On the other hand, it was probably the licence inherent in the interpretation of images that speeded the conversion process, because history indicates that the Maya accepted Christianity quite readily.



Maya imagery of the turkey sacrifice

Another important facilitator of conversion was the tendency of both Christians and Maya to accommodate and call upon a world of spirits in their everyday lives. It is taken for granted that "pagans" do this. I was taught there is but one God; but I was also led to expect, as were the Maya children of Tipu, that there is a rich spiritual world whose power is there for me to tap at any time. In my case, this means that I teach human evolution at the same time that I can believe in a guardian angel or a patron saint.

If I can accommodate readily a world of material and science as well as a spiritual world, am I any more or less pagan than the Maya who practised mathematics and astronomy, developed one of the world's most complex writing systems, and possessed a rich religious and symbolic repertoire? Christians would say that the critical element in all this is the acceptance of Jesus Christ and his teaching, but it appears that the Maya for the most part had no problems accepting Jesus and his teaching. After all, Jesus did not emphasize ritual so much as guidelines for human behaviour. Rituals, services, prayers, and other practices, even in Jesus' time, tended to reflect local cultural traditions. As the Christian message spread throughout Europe, Christian *practice* nevertheless conformed to local pre-Christian traditions. Given this perspective, just how "pagan" were the Maya of the 16th and 17th century?

**As always in the spread of Christianity among Europeans, the acceptance of new beliefs did not always mean the abandonment of traditional rituals**

The point is that the pagan difference was, at least in part, a construction of the Spanish Christianity of the 16th and 17th centuries. Although popular practice was always viewed as problematic by the clergy, proselytizers in early Christian Europe were more flexible regarding popular interpretation of ritual than seems to have been the case in the New World. I can only think that by the 16th century, official views of acceptable Christian practice had hardened and selective memory was in operation. The church had put the long and tortuous route to salvation in Europe behind it, and expected the Maya to do in a hundred years what had taken Europeans close to a thousand. ❦

# GRENADA
# THE SPICE OF TROPICAL LIFE

*The incredible range of wild and domestic plant life makes this tiny island a botanical treasure*

KEN BARBOUR AND JOHN H. MCANDREWS

SOUTHERNMOST OF THE CARIBBEAN LESSER ANTILLES, JUST 12 DEGREES NORTH of the equator, Grenada is a tiny mountainous island of volcanic origin with a dynamic flora. Only 33 kilometres long and 19 kilometres wide, much of it still undeveloped, the island contains five distinct plant communities, as well as lakes formed in volcanic craters, and a thriving agricultural industry. (It is also known as Spice Island, primarily for its nutmeg, *Myristica fragrans*, which accounts for one-third of the world supply.)

Ecologically, Grenada is a microcosm of the Caribbean. Information on the climate and vegetation of the Caribbean during the Quaternary period (the last 2 million years) is meagre, but the ROM's Botany Department is working in Grenada to reconstruct the vegetation history from fossils found in lake sediments and to collect authentic specimens of modern pollen, seeds, and other plant parts. Collections of modern plants are used to identify fossil pollen and seeds. The interpretation of the fossil record in turn can be used to explore the derivation of the modern flora.

Because of the island's young age and proximity to South America, it is thought that Grenada possesses few if any endemic species and that it is botanically similar to Trinidad and St. Vincent and the Grenadines. The only comprehensive plant collection from Grenada was made a century ago by W. E. Broadway, a native West Indian colonial officer who sold plant collections to herbaria around the world. (The ROM holds one of his original collections from Trinidad.) R. A. Howard's *Flora of the Lesser Antilles: Leeward and Windward Islands, 1974-1989*, the most recent treatment of the region's flora, is partly based on Broadway's work. ROM collections provide an opportunity to produce a more detailed account of the flora of Grenada. Despite Broadway's extensive work, the ROM collecting team has found several species previously unknown for the island.

Documentation of Grenada's flora is of critical importance because of

**The precatory peach grows around Lake Antoine, one of the five distinct plant communities of Grenada. The tempting bright red and black seeds are extremely poisonous if consumed, and the colouring is in fact a natural warning.**

PHOTOGRAPH BY KEN BARBOUR

*Ken Barbour is a technician and John McAndrews is a curator in the Botany Department, Royal Ontario Museum*

expanding agricultural and forestry activity over the past decades. Such human activity is potentially far more destructive of the native vegetation than any of the natural phenomena that Grenada has witnessed over the past several thousand years. The native vegetation of Grenada has developed and adapted in response to natural disturbances. However, following Hurricane Janet in 1955, which severely damaged the native forest (as well as orchards and other agricultural land), extensive plantations of exotic timber species such as the blue mahoe and Caribbean pine were established in place of native forest. Growing tourism is another potential disturbance. The tropics are the world's regions of greatest biodiversity and because of this concentration of plant life, long-term or permanent damage to even a small area can represent an enormous loss.

**Levera Pond (pictured here) and Lake Grand Etang (on the facing page) are two of the volcanoes on Grenada. A core sample extracted from Etang shows that rainforest has persisted for at least 25,000 years. This refutes a theory that the tropics were arid during the last ice age, 8000 years ago.**

Since 1992, Jock McAndrews and Ken Barbour, botanists from the Royal Ontario Museum, have combined efforts with Winston Johnson and Yasmin Comeau of the National Herbarium of Trinidad and Tobago at the University of the West Indies, Trinidad, to reconstruct the modern vegetation history of Grenada and to document the present flora by collecting plant specimens. This project follows up work conducted in 1978 by McAndrews and ROM research associate Jim Eckenwalder of the Department of Botany, University of Toronto. To date, approximately 500 of the estimated 800 to 1000 species have been collected, and specimens are housed at the ROM's Vascular Plant Herbarium, with duplicates at the National Herbarium of Trinidad and Tobago. Some of the more difficult plant identifications have been made by Dr. C. D. Adams of the British Museum of Natural History.

Although most islands of the Lesser Antilles were formed by volcanic eruptions during the past 20 million years, only Dominica and Grenada have crater lakes, the best source of the sediments that reveal prehistoric and historic vegetation changes. To collect the sediments, researchers extract successively deeper, metre-long core segments from the lake bottom. Back in the laboratory, pea-size bits of mud are taken at 20-centimetre intervals from the top of each core to its bottom, a backwards journey through time. Fossil pollen and fern spores are concentrated and then identified and counted under the microscope. Pollen and spore percentages are plotted as a time-series, calibrated by radiocarbon-dating of the mud core. This data presents a record of the historic and prehistoric changes in the environment around the lakes and can also lead to the identification of as many as 100 plant species.

There are at least five distinct volcanic craters on Grenada—the harbour of St. George's, Lake Grand Etang, Lake Antoine, Levera Pond, and the pastured wetland called Dig-Me-Out (a reference to mired cattle)—and there may be more. From Lake Grand Etang, in the central mountain chain, a 13-metre core was extracted and radiocarbon-dated to 25,000 years ago. Fossilized pollen analysis by Eugene Ramcharan shows that rainforest has persisted here for at least this length of time. This refutes a theory that during the peak of the last ice age, 8000 years ago, the tropics would have been arid while much of the northern hemisphere was covered by the polar glacier.

Levera Pond, in Levera National Park, is a brackish lake on the northeast corner of the island adjacent to the Atlantic Ocean. Melanie Sharman, a University of Toronto graduate student, discovered that 2000

PHOTOGRAPHS BY J. H. McANDREWS

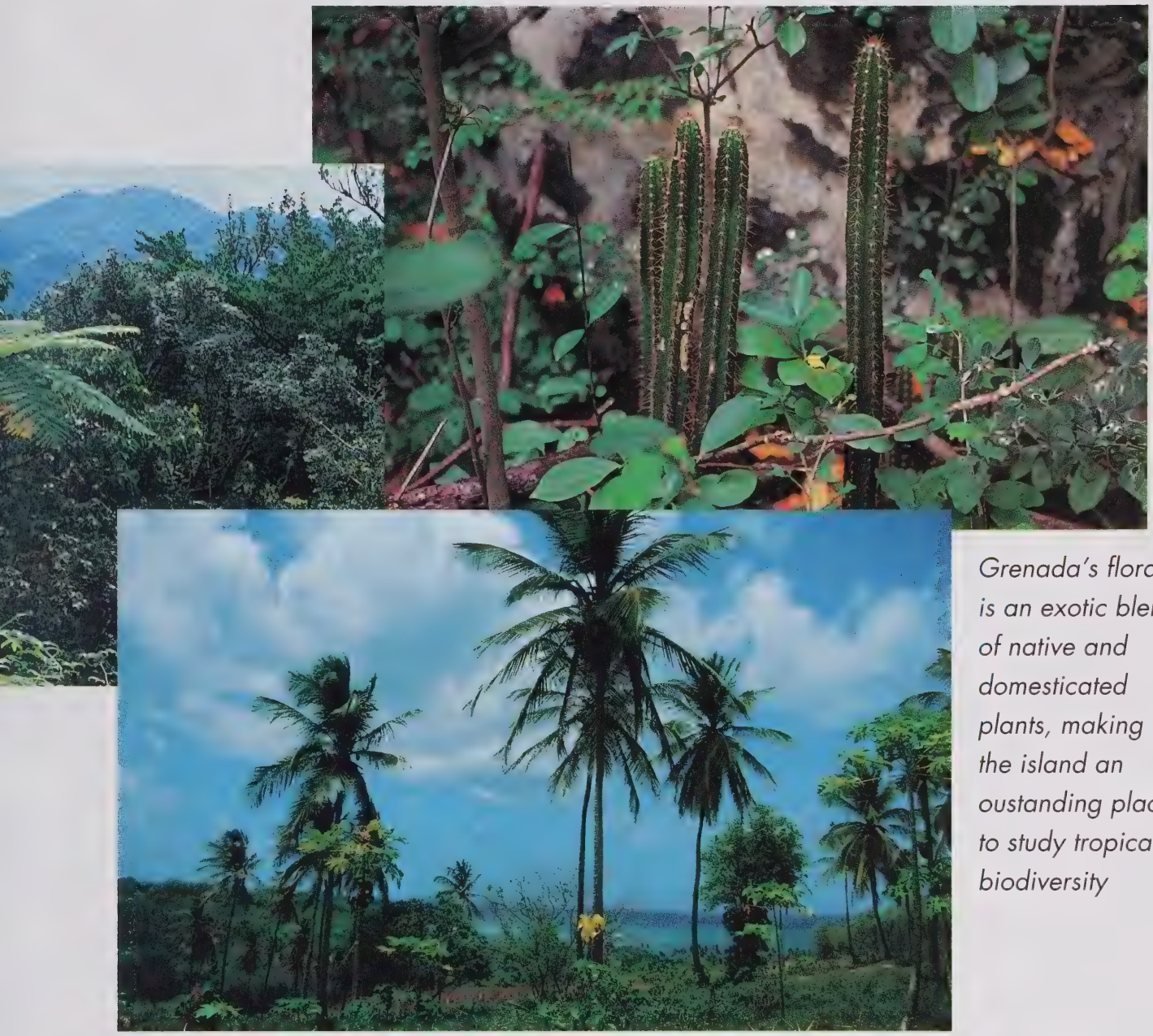
There are five distinct plant communities on Grenada. This page shows seasonal deciduous (top left), cloud forest (top right), and mangrove swamp (bottom). On the facing page there is dry scrub (top) and a beach community (bottom).

PHOTOGRAPHS BY KEN BARBOUR

years ago the pond was an open bay that was subsequently cut off from the sea by a sand bar. A mangrove swamp grew along the shore of the pond and endured for the next 1700 years. About 200 years ago, massive soil erosion from the surrounding slopes was caused by forest clearing and the planting of sugar cane. Erosional deposits rapidly filled in the pond, creating the modern-day mix of vegetation—red, white, and black mangroves, buttonwood, manchineel, and dry scrub forest.

The five different plant communities of Grenada range from the cloud forest located on mountain tops down to the beach community.

Located in the central mountains of Grenada, the cloud forest is similar to a rainforest, but it does not create its own hydrological cycle. Instead the mountains deflect upwards the westerly moist trade winds that cool as they rise, thereby losing their ability to hold water, which then falls as rain at high altitudes. The mountains also trap clouds as they pass over the island.



*Grenada's flora is an exotic blend of native and domesticated plants, making the island an oustanding place to study tropical biodiversity*

Characteristic plants include the tree fern *Cyathea*, the mountain palm *Euterpe dominica*, and large canopy trees such as *Sloanea*, *Dacryoides*, and forest plantation species such as the blue mahoe (*Hybiscus elatus*) and the caribbean pine (*Pinus caribbaea*).

Plant collecting in the mountainous cloud forest presents special challenges. Most large trees bear flowers and fruit high in the canopy and many epiphytic plants and climbing vines are also found only in the upper branches of trees. To collect specimens a 9-metre (30-foot) pole pruner was used. However, at the very top of the mountains, along the ridges, the trees are sheared by the persistent trade winds that blow across the island. While the species composition remains largely the same as in the conventional cloud forest, the areas of shorter trees are known as elfin woodlands.

The stereotypic image of lush green tropical forests is shattered by the appearance of bare trees and dry ground characteristic of the seasonal deciduous forest, the second community. Deciduous plants shed their leaves, flower, or drop seeds in response to changes in environmental conditions such as the onset of the dry or rainy seasons. Among the plants in this com-

munity are *Haematoxylon*, a logwood that is a source of a histological dye used in medical laboratories; *Genipa americana*; weedy species such as *Cassia*; and parasitic plants such as *Cuscuta americana*. There are also some plants that are adapted to several different communities. The deciduous cliff-dwelling bromeliads (air plants) and ferns found along the island's west coast persist in spite of a lack of soil and soil nutrients.

Dry scrub forest, located primarily along the perpetually dry and hot south and east coast of the island, almost at sea level, forms the third community. It comprises small trees and large shrubs, weedy plants, drought-tolerant grasses and sedges, euphorbs such as the manchineel, *Hippomane*, *Pithecellobium* (a legume with spectacular fruits that are attractive to birds), the thorny legume *Acacia*, and cacti such as *Acanthacereus*.

Mangrove swamps, the fourth community, are found along the coast and at Levera National Park. They contain plants that are adapted to wet soils, periodic flooding, and saline conditions. Vegetation lying just outside the swamp is usually salt-tolerant as well. There are three types of mangrove—red or *Rhizophora mangle*, black or *Avicennia*, and white or *Laguncularia*—and the buttonwood *Conocarpus*. Red mangrove produces long aerial roots that descend from the upper stem and branches and buttresses to help stabilize the plant in the soft swamp soil. At Levera National Park, the red mangrove is found in a zone surrounding the pond, with many stems and roots submerged in its water. Instead of aerial roots, the black mangrove produces pneumatophores, which are underground roots that poke up through the soil to take in oxygen. Black mangroves are in a zone next to the red mangroves, away from the pond. There is a mixed black mangrove and buttonwood zone.

The beach community, sometimes referred to as the strand line, contains salt-tolerant grasses, herbs, and shrubs. Because the coastline of Grenada is very rocky, sandy beaches are not as numerous as they are on other Caribbean islands. It is common for these beaches to have a sand fringe leading up to stabilizing ground cover such as *Coccoloba* and Nickernut, *Caesalpinea bonduc*, and grasses and sedges. Either seasonal deciduous forest or dry scrub grows beyond the ground cover. Many of Grenada's beaches remain unspoiled, and the collection team was often alone on the small, beautiful, golden sand beach at Levera National Park. Yet large resorts have had an impact on the beaches at Grand Anse near St. George's while some other beaches support coconut plantations.

Christopher Columbus was the first European to see Grenada. He named it Concepcion and later Granada. Although claimed as Spanish territory, the island was never settled by the Spanish. Its inhabitants, the Carib Indians, were able to repel all attempts at outside settlement for

**Three common crops: breadfruit (top), nutmeg (middle), and cocoa (bottom).**

PHOTOGRAPHS BY KEN BARBOUR

about 150 years. In 1609 a colony of English merchants was established, only to be abandoned a year later. Then in 1650, French colonists were successfully established and they renamed the island Le Grenade. After most of the Caribs were killed by the French, the last group committed suicide by throwing themselves from a high cliff now known as Le Morne de Sauteurs or Leapers' Hill. The island remained a French possession until 1762 when it was taken by the British who called it Grenada. In 1779, the French recaptured the island but it became British once again as part of the Treaty of Versailles in 1783. The two powers fought over their Caribbean colonies because African slaves made sugar production very lucrative. A mixed African, British, and French heritage is evident throughout Grenada.

**The exotic *cassia* (below) at Halifax Harbour grows at the margin of seasonal deciduous forest. A bounty of produce is sold at the Saturday morning market (facing page) at St. George's.**

The Grenadians have developed agricultural practices that can cope with the rough, hilly terrain of the central mountain chain. Crops are grown in all but the most remote areas. Sugar cane, labour-intensive and once the most important crop, diminished with the abolition of slavery in 1838. Today cane fields are found only in the southwest part of the island, mostly grown for limited amounts of raw sugar and local rum production. Around 1840, sugar plantations gave way to tree crops, most of which are now naturalized and an intrinsic part of Grenada's flora.

The main export crops are cocoa, *Theobroma cacao* ("food of the gods"), nutmeg, and bananas. Crops are mixed to utilize all areas of arable land. Hillsides are cleared and planted with bananas, nutmeg, cocoa, and other spices, including cinnamon, cloves, bay leaf, black pepper, chili pepper, ginger, and vanilla (an orchid). Many tourist guides say that you can smell the spices all over the island. On the main roads this spicy aroma must compete with the smell of diesel fuel from trucks.

Nutmeg is grown at higher altitudes, cocoa at lower altitudes, and bananas in both areas. Cash crops such as carrots, cabbage, and onions are becoming more common although they are planted in a manner that causes serious soil erosion from steep hillsides. On one occasion, while hiking through the dry scrub forest near Levera Pond, the collection team stumbled across a watermelon patch.

Other food crops include coconuts, guava, sapodilla (a source of chicle for chewing gum), mangos, mammee apples, sour sop, papaya, and breadfruit. Breadfruit is reputed to have been introduced by Captain Bligh of HMS *Bounty*.

The open-air market at St. George's bustles with activity every Saturday morning as local farmers sell their goods. After a morning stroll, with temperatures reaching 30°C, the juice from an unripe coconut makes a refreshing drink. The fresh, strong spices make those sold in North American supermarkets pale by comparison.

The Grenadian flora is an exotic blend of native and domesticated plants, making the island an outstanding place to study tropical biodiversity. While the tropics contain regions with the greatest biodiversity on Earth, destruction in certain locales has been rampant. Plants are important resources for everything from food to air, soil, and climate control. More than 80 per cent of pharmaceuticals are derived from botanical compounds. The ROM Grenada project has provided a model for combining the study of vegetation history with documentation of modern flora, and is providing data valuable for the creation of effective resource management. ❦

PHOTOGRAPH BY J. H. McANDREWS

PHOTOGRAPH BY J. H. McANDREWS

# THE RARE BEAUTY

*Bird's-eye and curly maple were once the substance of unusually striking furniture*

DONALD WEBSTER

nce in my misspent youth, I had occasion to buy 500 board feet of bird's-eye maple from a small hardwood sawmill in Maine. Generally the sawyers would throw aside bird's-eye lumber for winter stove-wood. "Pretty stuff, but too contrary," the owner told me. "Real katywhompus wood and won't no one take it."

Although that sawmill owner and other modern woodworkers may not have a high opinion of bird's-eye, this and curly (tiger) maple are in fact naturally patterned woods that were once used to create some of the most visually striking furniture produced in North America.

During the colonial period in America and the late 18th century in eastern Canada, there was a considerable supply of old-growth figured maplewood, as forests were cut for expanding agricultural frontiers. By the 18th century, handsome furniture in Queen Anne and Chippendale styles was already being built in the first settled areas of New England. Upper Canada was settled after 1784 by the Loyalists who moved to the shores of the St. Lawrence River and lakes Ontario and Erie. Beginning in the 19th century, the agricultural frontier of Upper Canada advanced inland, resulting in several decades of forest clearing.

Huge sugar and red maples, black cherry, and black walnut trees were among those cut in the carolinian and mixed forests of what is now southern Ontario, New York, and Ohio. Most trees were burned for charcoal or potash or simply destroyed where they fell; only a small percentage of the wood was saved for sawing into planks. Clearing forests was a slow process, how-

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*Donald Webster is curator in charge of the Canadiana Department, Royal Ontario Museum*

# OF FIGURED MAPLE

**Curly**
This sideboard, measuring 139.1 cm x 154.3 cm (54.75 x 60.75 inches), was commissioned in 1829 in Carrying Place (near Belleville, Ontario). The piece is made entirely of curly maple and secondary pine with the exception of a walnut-veneered under-top strip and lower skirt, and walnut lion's-paw feet. Collection of the Royal Ontario Museum.

ever, and wide planks of fine wood were available until the 1860s, although after that period the supply rapidly declined.

Figured maple was greatly appreciated in Upper Canada. Though often mixed with cherry wood in furniture, it was also used as the sole primary wood in a wide range of forms from chairs to large cabinet pieces. Little Canadian maple furniture survives from the 18th century, although a number of excellent pieces, which originated in the regions around Kingston and the Niagara peninsula, exist from the period immediately preceding the War of 1812.

Figured maple is among the most difficult wood to prepare and work, which is why it was saved for better and more expensive pieces

Curly and bird's-eye maple are among the most difficult woods to prepare and work, which is why well-figured planks were typically saved for a maker's better and more expensive pieces. Before the development of kiln drying, figured maple was best sawed from air-dried logs that had been stored under cover for at least one year, preferably two. If the logs weren't thoroughly dried, the figured-maple lumber was most likely to warp, bow, dish, and twist. Planks had to be stacked absolutely flat, sometimes under weights, for another year after sawing to ensure their stability.

Once a cabinetmaker had a supply of well-dried figured maple, new problems would have to be addressed. The bird's-eyes and curls of maple are much harder than the surrounding wood, and grain direction can be eccentric. Planing can only be achieved in tissue-thin cuts, for the eyes and curls chip out easily, leaving pock-marks or hollows. Chiselling of mortise-and-tenon joints requires a surgical approach. Needless to say, decorative carving of figured maple was rarely attempted. Furthermore, the hardness of the eyes and curls caused heavy wear on tools.

It is little wonder that later 19th-century and modern furniture factories would not work with figured maple. The labour and wear-and-tear on equipment are prohibitively expensive. Yet small Ontario cabinetmaking shops produced great quantities of figured-maple furniture during the height of its popularity from about 1800 to the 1850s. By the 1860s, the cut-off of old-growth hardwood forests was nearly complete, and so supplies dwindled. Factories, requiring reliable supplies of machine-workable wood, were displacing independent furniture makers. By 1870 production of bird's-eye and curly-maple furniture had virtually ceased.

A split section of sugar maple shows the curly and bird's-eye graining in a natural state. On the right, the exterior of the cambium, the layer beneath the bark, shows the bumps or nodules that will appear as the eyes of the bird's-eye maple after the wood is finished. On the left, the pattern of ridges is the curl of curly maple as it appears before finishing.

It is impossible today to identify the makers of most early Upper Canadian maple furniture, because with rare exception they did not mark their works. Modern collecting, which began after the Second World War, has brought to light pieces that sometimes reveal regional provenances. Many of the early Upper Canadian cabinetmakers could not practise their trade full time, as could their contemporaries in the larger markets such as Boston or Montreal. In addition to making furniture they built home interiors, ship cabin interiors, and even coffins. Some supplemented their trade by landowning and subsistence farming. Many were dealers in lumber, hardware, paints and varnishes, and used furniture. Most also took in trade logs, lumber, agricultural produce, or old furniture for resale.

Simpler pieces made wholly of maple, such as candlestands, side chairs, or drop-leaf tables, were made in standard forms throughout eastern North America with no clear regional distinctions, and over a long period of time. For these objects it is difficult or impossible to distinguish

**Mixed**
William ("Sawmill Willie") Thompson of Agincourt (just east of Toronto) produced this corner cupboard, measuring 237.2 x 127 cm (93.38 x 50 inches), around 1830 to 1850. It is made of mixed curly and bird's-eye maple, with cherry knobs and secondary pine. Collection of the Royal Ontario Museum.

## Bird's-eye

This imposing chest of drawers was made in the Mennonite region of Conestogo-Elmira, in Ontario, around 1830 to 1840. It measures 114.3 x 118.4 cm (45 x 46.63 inches). A sawed bird's-eye maple veneer covers the fronts of the pine drawers and the upper and lower skirts. The rest of the chest, including the drawer knobs, is made of cherry. Collection of the Royal Ontario Museum.

Canadian origins from northeastern American.

To complicate matters, figured maple was also used for English furniture, which was sometimes similar in style and form to North American pieces. The sugar maple was introduced into England in 1735, and figured maple was part of hardwood lumber exports from Canada and the United States in the 18th and 19th centuries.

Origins of maple furniture can be determined by the identification of secondary or interior woods through wood-cell analysis. In Upper Canada, white pine was almost always used. Pieces from New England, New York, and Ohio include a mixture of woods. English furniture makers typically used oak, Scotch pine, or European larch as the secondary woods.

In quantity and variety Upper Canada was the North American leader in the production of bird's-eye and curly-maple furniture in the first half of the 19th century. Today pieces grace the collections of museums, historic houses, and private individuals. At best, the furniture shows a stylish and tasteful use of a visually extreme wood. At worst the pieces are gaudy. Still others, which would be undistinguished if produced in pine or birch, stand out because of the figured maple. The Royal Ontario Museum's best pieces can be seen in the Sigmund Samuel Canadiana Gallery.

Upper Canada was the North American leader in the production of figured-maple furniture in the first half of the 19th century

## Why Do Maples Develop Bird's-Eye and Curly Patterns?

No one is absolutely certain why bird's-eye and curly patterns develop in maple, and there may in fact be more than one cause. While the patterns are most common in sugar maple, they are also found in red and silver maple, and other hardwoods. Bird's-eye maple is often identifiable in de-barked logs, even before sawing, by multiple bumps or pimples on log exteriors. In younger maples, with smooth rather than mature scaly bark, the bumpy exterior can sometimes be spotted on the living trees.

Currently there are at least four theories. The earliest, still commonly cited, states that the grain anomalies are caused by a filamentous parasitic fungus that has yet to be classified. This fungus inhabits the cambium, the outer living layer of wood, and stimulates the growth of the Sanio's trabeculae, numerous tiny needlelike structures that extend radially and around which new cambial layers must form. According to this theory, which was presented in 1922, the Sanio's trabeculae are miniscule fungus-induced knots.

The second theory suggests that cambial fungi inhibit annual growth in sections of trees, causing conical indentations that form small eyes. Later, when the cambium resumes growth, its new layers conform to the indentations, resulting in long radial depressions that are the eyes of bird's-eye maple.

The third theory is similar but omits the parasitic fungus; it proposes that the bird's-eye pattern begins with injured buds that never actually develop into twigs or branches. Called epicormic sprouts, the multiple abortive twigs are then surrounded and ultimately covered by new wood growth, which appears in cut lumber or veneer as tiny knots.

The fourth theory is that the curly or bird's-eye patterns are a pathological condition of naturally repressed or stunted trees. Such trees can be found in the northern extreme of their range—for maples this is Ontario and Canada in general—and in light-deprived situations such as the north and east slopes or as part of the understorey. These trees usually grow more slowly, with more densely grained wood than those located more advantageously. Stunted trees are also more susceptible to disease and insect damage, which in turn can cause anomalies in grain structure.

*Glass beads are deteriorating on a piece of North American beadwork.*

PHOTOGRAPH BY BRIAN BOYLE

# Glass Bead in Soapy Bubble

FROM AS EARLY AS THE 17TH CENTURY European glass beads were popular trade items. During the 18th and 19th centuries they were produced in large quantities and appear on ethnographic artifacts from all over the world.

Cheap trade beads are not the finest examples of the glassmaker's art. Since they were often made from remelted, badly mixed leftovers, their quality, usually poor, varies from batch to batch. Their glass is sometimes chemically unstable, and unless the beads are kept in ideal conditions they disintegrate, sometimes first rotting the threads and underlying fabric of the items they decorate.

Glass is made by mixing sand (silica) with alkaline salts such as soda, potash, and lime, which act as a flux by lowering the very high melting point of the silica to a workable level. The proportions are critical. An imbalance in any of the ingredients affects the characteristics of the glass. Unless there are enough lead salts or lime as stabilizers, the glass can be so unstable as to be water soluble.

If glass is coloured, the ingredients in the basic mix have to be adjusted to compensate for the effect of the colouring agents. Excess amounts of any one could upset the balance. Within limits, glass manufacturers gave priority to matching colours rather than quality, which is why decay is often associated with particular colours.

Deteriorating beads are often dirtier than surrounding stable beads because the excess alkaline salt absorbs moisture (sweating or weeping), which traps dirt. Other typical signs of deterioration are opacification caused by very tiny cracks (crizzling) that can be seen under magnification, and a powdery white deposit of salts on the surface.

There is an appalling type of bead degradation that occurs on some skin and leather artifacts. It was first described by June Hosford of the South African Museum of Natural History, who found it on a beaded Ndebele apron. The alkaline salts from the glass react with fatty material from the leather to form soap (saponification), which reacts with the remaining beads, breaking down the silica until no vestige of the glass remains. The result is a soft, swollen, dirty, amorphous sludge that oozes nastily into

the surrounding beadwork.

ROM conservators have learned to diagnose the condition in the early stages when it is barely noticeable. There are several cases of soapy bead in the Ethnology collection of the Royal Ontario Museum and others have been brought in by private collectors. There is no obvious common factor other than contact with hides and leather. Age, colour, culture, treatment, environment, tannage, skin type, country of origin, chemical composition of the beads, and oils do not appear to play any role.

Soapy bead remains a mystery. Given the apparently simple cause, it should be much more common. However, there are many examples of sweating or crizzling beads attached to oily skins, which show no signs of saponification. Furthermore, conservators have not been able to reproduce soapy bead under laboratory conditions. Only beads in contact with other soapy beads have saponified. This suggests the presence of an unidentified biological agent.

At present the condition is incurable. Once well established, soapy bead can be retarded, but the eventual destruction of the artifact cannot be stopped unless the beads are removed. For beads in the very early stages, ROM conservators are experimenting with promising treatments that remove excess oil and salts, but they need a longer period of evaluation.

Glass deterioration can be detected by using a simple test for free alkaline salts. Collectors can avoid investing in doomed beadwork by pressing damp, red litmus paper to any areas that look unusually dirty, sticky, or dull. If the glass is stable the litmus paper will remain red, but if the paper turns blue it shows that all is not well. The glass beads are headed for soapy bubble (trouble), as a Cockney conservator would say.

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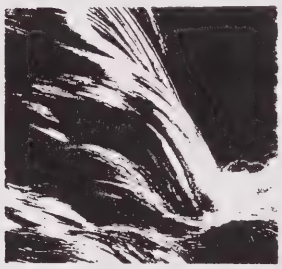
JULIA FENN
*Julia Fenn is a conservator in the Conservation Department, Royal Ontario Museum*

LOVE HANDEL'S

HANDEL:

*ROYAL FIREWORKS MUSIC*

HANDEL
*Water Music*
*Wassermusik*



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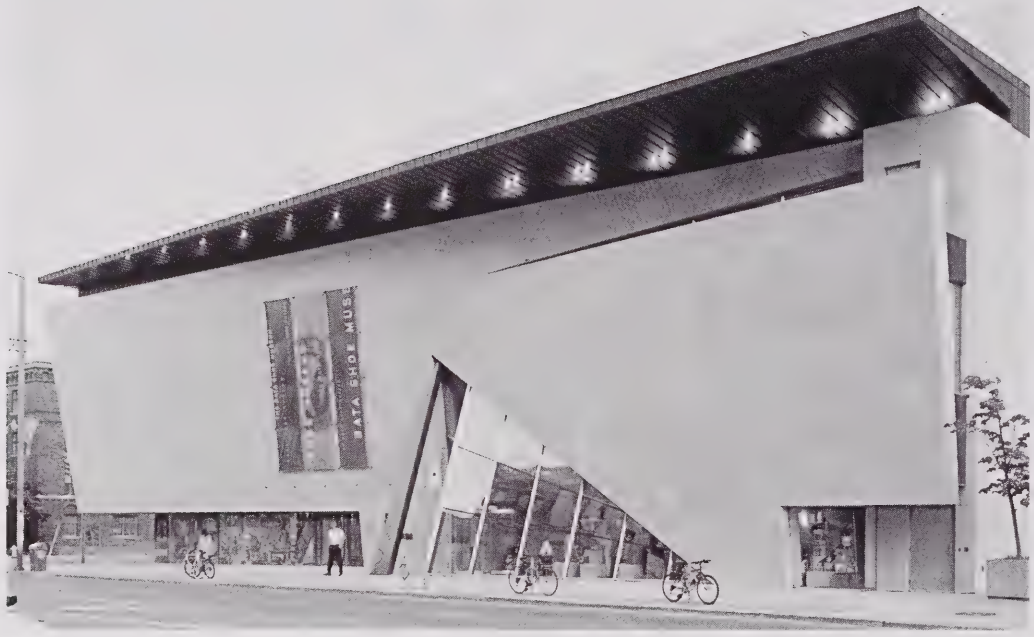


*The front facade of the new Bata Shoe Museum in Toronto.*

PHOTOGRAPH BY RICHARD JOHNSON

# The Bata Shoe Museum

COLLECTING IS ONE OF THOSE ACTIVities that tread the fine line between passion and obsession. Nowhere is that more evident than in the museums and galleries that are founded on the collection of a single individual. The best of these collections not only amass and protect valuable resources but can provide fascinating insights about the collector, exposing personal tastes and views. Nothing has brought this point home more clearly in recent times than the exhibition of art from the Barnes collection, with its very particular vision of Impressionism and Post-Impressionism.

The Bata Shoe Museum, which opened in Toronto in May, is a tribute to the singular efforts of Sonia Bata. Bata was born in Switzerland, where she studied architecture. In 1946 she married Thomas J. Bata, whose family had been prominent manufacturers of shoes in Czechoslovakia until the company was nationalized. The Batas moved to Canada at the beginning of the Second World War, determined to rebuild the business. Bata Shoes is now a global footwear business.

Shoes, like any other form of costume, represent characteristics of the cultures and individuals for which they were made. They show how people adapt to their environments, practise rituals, display social status, and facilitate work and recreation. Shoes are also indicators of changes caused by the influence or predominance of one culture over another. Sonia Bata saw this herself when she travelled to countries with Bata shoe factories, which provide shoes for local as well as international markets. Over the years she has been interested in why shoes were designed in particular ways, and this—combined with the disappearance of traditional dress—has motivated her, since the 1940s, to collect footwear from all over the world. The collection now comprises close to 10,000 artifacts, including related items such as tools and art. It spans 4500 years of history.

Now in its new home on Bloor Street, close to the Royal Ontario Museum and The George R. Gardiner Museum of Ceramic Art, the largest and most comprehensive collection of shoes in the world is being cared for and researched by professional costume historians. Rotating exhibitions on different themes will ensure that the collection receives excellent exposure.

Sonia Bata's pursuit of shoes was complemented by her love of archi-

*A pair of American tin anniversary shoes produced in 1873.*

tecture. Raymond Moriyama, an architect renowned for his innovative designs for the Ontario Science Centre, the Metropolitan Toronto Reference Library, and the Canadian Embassy in Tokyo, was commissioned to design the museum. His concept is unique. Moriyama sees the building as a container, and this idea was inspired from his first viewing of the collection, during which he was impressed by the array of shoe boxes that protected the footwear.

The roof plane suggests a lid resting on an open box, and the roof's copper-clad soffit and fascia align with the green parapet of the neighbouring building. As the copper develops a patina over time, the impression of a lid will become more pronounced. The north and east walls of the building are angled in a way that provides a space for street performance. All walls are covered by a limestone that has a tone, sheen, and fine texture that suggests raw leather. Interior references to shoemaking are amusing and attractive. All signage is made from leather; a huge window, designed by Lutz Haufschild, includes images of workshops and tools; and Dora de Pédry-Hunt created cast-bronze medallions depicting shoes from the collection, which appear on the handrails and balustrades of the central staircase.

Touring the museum is simple, for the layout of the building's three storeys is very straightforward. Visitors can compare foot size with the ancient sandals, armour, and pumps of generations past. They can marvel at the unusual—bear-fur shoes for Japanese Samurai and human-hair slippers that belonged to Australian aboriginal executioners. Styles repeat themselves; some shoes that are hundreds of years old look quite modern. The circumpolar material is outstanding. On a more entertaining note, there are shoes that belonged to historical figures and celebrities, from ivory-coloured satin flat shoes with matching silk stockings and cream-coloured kid gloves worn by Queen Victoria to an outrageous pair of platforms worn by Elton John. And on a more moving note, there is the single running shoe worn by Terry Fox.

One-quarter of the bones in the human body are located in the feet and yet the ways in which we clothe these very important appendages represent a broad span from human reason to folly. As someone who has running as my own obsession and passion, I can offer testimony to the importance of shoes. A walk through the Bata Shoe Museum, the only institution of its kind in North America, is a worthwhile load on the feet. The museum is primarily funded and governed by the Bata Shoe Museum Foundation. For more information call (416) 979-7799.

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SANDRA SHAUL
*Sandra Shaul is executive editor of* Rotunda *magazine*

PHOTOGRAPH COURTESY OF THE BATA SHOE MUSEUM

# ROM Answers

**Dear ROM Answers,**
I am writing with regard to a large chest containing a silver tea service that I own. It is a large solid-walnut silver chest with four drawers for flatware, the top opens for access to the tea service, and it rests on a floor stand, which is a complete piece of antique furniture in excellent condition. The approximate dimensions of the chest are 109 cm high including legs; the cabinet is 60 cm high and 66 cm wide. The chest and the silver tea service were purchased from A. C. Routier Bijoutier, 50 Cote de la Montagne, in Quebec City, and the estimated manufactured date is 1908. The chest contains 1 silver tea and coffee set with cream and sugar containers made of legacy plate, silver on copper; a complete sterling silver service for 12, totalling 234 pieces. There are also 23 serving and carving pieces. Miscellaneous silver-plated pieces include five coffee spoons, six dessert spoons, and two knife rests. The pieces are now out of production, and resemble the "Joan of Arc" pattern although they are heavier. Any additional information you may provide would be appreciated.

YOURS TRULY,
D.M., PARKSVILLE, B.C.

**Dear Reader,**
Thank you for writing to ROM Answers. Judging from the description that you provided, it sounds as if you have already had your silver assessed by a qualified professional appraiser. I cannot find any information on "Legacy Plate." It is probably not a factory or a company name but more likely a brand name or the name of a line supplied by a factory to a certain wholesaler or retailer. You don't say whether A. C. Routier was the retailer whose name is on the case or the person who sold it to you. If he was the original retailer whose name is on the case, it may be possible to trace his dates of business through city directories for Quebec. Extensive services of table silver were often acquired by wealthy consumers between 1880 and 1914. Often the flatware was of sterling silver. Many of these services have survived. Your dating of c. 1908 sounds plausible. It was most likely purchased for a wedding or an anniversary. I have not seen a tea and coffee service commonly associated with these sets, but many options were possible, depending on the retailer and the customer. Sets of cutlery in fitted cases like this are often referred to as a "canteen," a reference to the locked box that held the silver. The cabinet-work and silk lining on yours seem to be of superior quality. Thank you again for your letter.

PETER KAELLGREN
EUROPEAN DEPARTMENT

**Dear ROM Answers,**
We purchased this tea and coffee set at an auction several years ago and have been unable to trace or find any information on it and would be pleased if you could help us in any way regarding its history or evaluation.

It is brass-plated and appears to be hand-carved. The tallest piece is approximately 30.5 cm high and the teapot is 18 cm. The sugar bowl and creamer are 13 cm high. The oval tray measures 48 x 35.5 cm and is ornately carved all around. The handles are wooden, black in colour. All pieces are heavy.

We cannot find any identification marks or numbers on the set. We would be very pleased if you could find any history on this for us.

Thanking you in advance.

YOURS TRULY,
M.G., BELLEVILLE, ONTARIO

**Dear Reader,**
I don't know why but I have the nagging feeling that I have seen a tea and coffee service like yours somewhere before. I spend some time every August looking at the booths of imported goods for sale at the Canadian National Exhibition in Toron-

*If you possess furniture, silver, glass, metalwork, ceramics, textiles, or small decorative objects that may have an interesting past and have aroused your curiosity, this column is for you. Send a clear black-and-white photograph (or 35-mm colour slide) of the object against a simple background, providing dimensions, a description, any markings, or any known details of its history to: ROM Answers, c/o* Rotunda Magazine, *Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, M5S 2C6. Be sure to enclose a stamped, self-addressed envelope large enough to include any photos that we must return to you with the reply.*

*Neither* Rotunda *nor the author nor any other person who may be consulted assumes any legal responsibility for these opinions or their ramifications. No financial appraisals will be offered. If your query is selected to be published in the column, only your initials and city will appear, in order to protect your privacy. Letters will be acknowledged as staff time comes available.*

to, and I regularly look in gift stores just to see what is available that can be confused with older pieces.

On the surface, your tea and coffee service follows the standard forms that had evolved by Victorian times in England: a tall bulbous coffee pot, a low rotund teapot, and a cream and sugar. However, these forms have often been copied and adapted, especially in this century.

Several things cause me to wonder about your set. First, it is unmarked. You do not mention any wear and none appears in the photograph. This suggests that it is comparatively recent, which means that it should bear some marks, if only a model number for factory inventory purposes. Secondly, both the cream and sugar have covers. A cover is acceptable on a sugar bowl; however, it has been more usual since the late 1800s for neither to have covers. My feeling is that your set was made in India, Pakistan, or a Middle Eastern country sometime fairly recently.

I seem to recall similar sets being sold in a store in Toronto. They were brass. You mention that all the pieces in your set are heavy. Sets manufactured in North America or Britain would not feel heavy; however, if the body is brass, it would. The sets that I saw had similar incised vines and flowers, which are vaguely reminiscent of Victorian designs. The details of the rococo feet are not precise or well cast. Western manufacturers use metal alloys that result in fine definition. However, cast elements on imported commercial-quality brass often exhibit rough surfaces and poor detailing. The handles on the cream and sugar look like ones I have seen on brass from India or Pakistan. In hot countries, the hinged covers would be useful for keeping insects out of the contents. It is also worth remembering that extensive factories were set up in India and Pakistan during the 19th century by foreigners who took advantage of poorly paid labour to make silver in the European style. Some of these factories have continued into the present century. Perhaps some astute reader has seen a similar tea and coffee service. Thank you for writing to ROM Answers.

P. K.

**Gill Theatre Backdrop in Halifax**

We were delighted by your decision to include "Echoes of Toronto's Theatrical Past" in the Spring issue of *Rotunda.*

You may be interested to know, however, that a much older backdrop, from the set of 14 painted by William Gill for the Halifax Academy of Music in 1892, still exists. Acquired for the Oddfellows Hall in Middle Musquodoboit when the Academy building was demolished in 1929, Gill's Garden Scene was used as the front curtain for the restored and renamed Bicentennial Theatre there in 1985. After its rejection by the fire marshal, the drop was damaged when moved into upstage storage and, sadly, does require immediate conservation.

William Gill began his theatrical career painting scenery for the Temperance Hall in Halifax in 1873 and joined the William Nannary Company in 1875 as resident scenic artist. Newspaper reviews (in Halifax and Saint John—we hope to check the Montreal papers soon) from that period frequently noted that audiences applauded the sets, so impressed were they with Gill's artistry. He later joined the staff of the Boston Museum where he helped create the sets for the first *Pinafore* in North America, but he returned often to Nova Scotia. He also painted the scenery for the Lyceum Theatre in Sydney, since lost to fire.

Watercolour paintings by Gill were included in the Royal Canadian Academy's 1881 exhibition in Halifax and the Colonial Exhibition in London, England, in 1886. He submitted to other exhibitions in Halifax and Boston as well during the 1880s. The Confederation Gallery in Charlottetown and the Nova Scotia Museum in Halifax both include a painting by Gill among their holdings.

YOURS SINCERELY,
PATRICK AND MORA DIANNE O'NEILL,
HALIFAX, NOVA SCOTIA

# The Astonishing Man in Ice, Excellent Nature Guides, Intelligent Photo Essays, and More

DESPITE MODERN RESCUE EQUIPment, an average of 200 hikers and mountaineers die in accidents and avalanches in the Swiss and Austrian Alps each year. Because of the remoteness of the terrain and the harshness of the weather, many of the bodies are discovered only years or even decades after the fact. So when, in 1991, a German couple on holiday came upon a corpse partly freed from the slowly retreating ice, they assumed it to be the body of yet another long-lost climber. But those responding to the first report soon recognized that the astonishingly well-preserved remains were very old—perhaps hundreds of years.

Eventually (but only after considerable damage had been done to the body and to the site) the authorities called in Konrad Spindler, the nearest qualified prehistorian and archaeologist. As Spindler relates the story in **The Man in the Ice** (Doubleday Canada, $34.95), the body turned out to be that of a Stone Age traveller who died 5000 years ago. It also turned out to be an international media sensation. Even the fact that the book is rendered from the German, and so tends to be a little stilted, as German-into-English translations often are, doesn't diminish the story's fascination.

It's a story of which most of us can recall some details. The man had been crossing over the mountains dressed in what seem to have been well-made leather garments (actually they were fur ones, which time had tanned, so to speak), wrapped in a cloak insulated with grass, with more grass stuffed inside his shoes. He carried a copper-headed axe and a flint knife in a curious macramé-type sheath, but otherwise was not really armed: his quiver was full of arrows but the bow he carried was a new stave that he was still carving into shape. He had food with him when he perished and also live embers from the fire at his last encampment, wrapped in leaves and bark. On his back was what was at first thought to be a tattoo but was only temporary decoration: a series of short lines of different lengths, like some kind of crude arithmetical tally.

All of these facts proved immensely valuable to scholars, who had lots of previous archaeological evidence to compare them with, but of course had never seen the well-preserved flesh of a European who lived five millennia ago. And this simple fact, I think, is what proved so irresistible to the general public. Think of *The Bog People*, the classic 1964 book by the Danish archaeologist P. V. Glob, about the well-preserved bodies of Iron Age men and women (sacrificial victims, apparently) found across northern Europe in the peat bogs. More recently and closer to home, there is Owen Beattie's and John Geiger's rivetting 1988 work *Frozen in Time*, about the ice-preserved bodies of sailors who had died during the doomed Sir John Franklin Expedition in the 19th century.

This experience is not the same as the urge to record one's loved ones as they looked in life. But death-bed photography, which was commonly practised among the Victorians, takes on in time a vivid historical significance that outlives, as it were, the immediate needs of grieving and remembrance. This is a subject discussed, and illustrated, in great detail in Jay Ruby's book **Secure the Shadow: Death and Photography in America** (MIT Press, $US39.95), which also deals with the custom as it is still followed in certain very isolated corners of the United States.

In a modern-day technological and well-documented civilization, photos seem more "real" than paintings do, even paintings made from life by skilled portraitists. That's why Sir John A. Macdonald, for example, is so real a character in the minds of Canadians, as compared to some equivalent person of an earlier generation before the arrival of photography. Perhaps the ultimate experience of this type is to look upon the actual faces of people very long dead indeed, yet so well preserved as to make them appear ready to speak.

SOME OTHER NEW BOOKS OF INTEREST to *Rotunda* readers:

• Many readers will remember a 1980 book by the Canadian poet David McFadden entitled *A Trip Around Lake Erie*, with illustrations by the late Greg Curnoe. According to the entry on McFadden in the *Oxford Companion to Canadian Literature*, the book and its companion volume, *A Trip Around Lake Huron*, "are picaresque works [that] illustrate the struggle of the small man to make sense of an increasingly surreal and commercialized century" —and also of course to describe life as McFadden found it on both sides of the border.

Ken Sobol and Julie Macfie Sobol, two Toronto writers who grew up in Cleveland and Detroit respectively, accomplish much the same task in their travel narrative, **Looking for Lake Erie: Travels around a Great Lake** (Penguin Canada, $29.99). Writing sometimes in their individual voices and at others in a joint diction, they make a discontinuous circuit around the second-smallest, shallowest, most heavily populated, and most ecologically fragile of the Great Lakes. They encounter heartbreaking urban decay in the American rust-belt cities of Buffalo, Cleveland, and Toledo. On the north shore, which is historically, economically, and even botanically different from the other, they enter many distinctively charmless small Canadian towns, almost all of them struggling for survival. One is so dull that they call its residents "Prozac in human form." The co-authors encounter all the petty annoyances and off-beat characters essential to this kind of travel book, and they do so in prose that rises to zest without descending into journalese.

To be brief, they see the lake as a body of water that divides two cultures which most people believe are far more similar than they actually are.

In the western end of the lake, where a string of islands lies like stepping stones, they find that Canadian tourists are beginning to join the many American visitors to Pelee Island, the largest and most northerly of the archipelago. According to the Sobols,

> *You hear them saying, 'You know, this place is just like [wherever they originally came from] thirty or forty years ago.' It's a statement that would only make sense to a Canadian. Very few Americans can remember anything like Pelee; real rural memories have long since disappeared from the American consciousness. In any event, the two national imaginations operate on quite different aesthetic principles. The American view of the countryside is based on a vision of lush fullness, while the Canadian outback is seen (by non-natives, anyway) as spare and empty; one must be sorted through, the other filled in.*

• A number of inexpensive new books on nature, the outdoors, ecology, and birding stand out among a recent torrent of new and revised works in these areas. **Algonquin Park: Excursions with a Photographer** by Dave Taylor (Natural Heritage, $19.95 paper) serves two purposes. It can stand on its own as a collection of striking photos of what is undoubtedly Ontario's most famous and best-loved provincial park, now launched on its second century. It's also a sort of how-to book, with a great deal of practical information for amateur photographers seeking to work in this particular environment.

The connection to Doug Bennet and Tim Turner's handy reference **Up North: A Guide to Ontario's Wilderness from Blackflies to Northern Lights** (Reed Books Canada, $19.95 paper) is obvious. Bennet and Turner present quick-to-use chapters on the fish, mammals, birds, amphibians, and fabled insects of Northern Ontario, using magazine-style sidebars and detailed line drawings.

**The Future of Northern Forests** edited by Christopher McGrory Klyza and Stephen C. Trimbulak (University Press of New England, US$19.95 paper) is a collection of essays by various American experts on the subject. While the case studies are taken from the United States, there are enough similarities to Canadian situations that virtually all the implications will frighten and sadden Canadians just as much. **A Naturalist's Guide to the Arctic**, published by the University of Chicago Press ($19.95 paper), is by a Canadian, E. C. Pielou, who deals with the flora and fauna (and some of the special travel problems) of the Far North. The book is as easy to use as the others but is a much more serious effort.

**Dean of the Birdwatchers: A Biography of Ludlow Griscom** by William E. Davis Jr. (Smithsonian Institution Press, $US29.95) tells the story of one of the most important American ornithologists and the person who perhaps did more than any other to champion bird-watching over bird-hunting. His dates were 1890 to 1959. To judge from the affectionate foreword by Roger Tory Peterson, he was a real rough diamond, sometimes irascible, at other times soothing, but a master organizer and crusader always.

• **A.D. 1250: Ancient Peoples of the Southwest** by Lawrence W. Cheek (University of Arizona Press, $49.50) is one of the most visually attractive and genuinely informative books on aboriginal peoples that I've seen for some time. Part of its appeal is that the palette of the splendid photographs runs heavily towards the reds and yellow ochres which we associate with the American Southwest. But the text is thoughtful and intelligent, too. It recreates the nations—Anasazi, Sinagua, Mogollon, Salado, and Hokokam, great builders all—who came together in the desert about 2500 years ago and created a civilization that lasted a millennium.

• **Industrial Facades**, by the German photographic team of Bernd and Hilla Becher (MIT Press, $US75) is a photographic study, in silvery black-and-white, of the architecture of old heavy-industrial plants in their country. One of the points, of course, is that they might just as easily be now-deserted mills, foundries, and factories in Pittsburgh, Pennsylvania, or Hamilton, Ontario, or anywhere else in the West where manufacturing once reigned above all. All the Bechers' portraits are snapped from the same straight-on angle, as though the structures were criminals having their mug-shots taken. The book makes a point about the excessively utilitarian beauty of such structures of course. But it also tells a silent tale of wrenching (almost tectonic) changes in the world's economy.

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DOUGLAS FETHERLING
*Douglas Fetherling is book review editor of* Rotunda

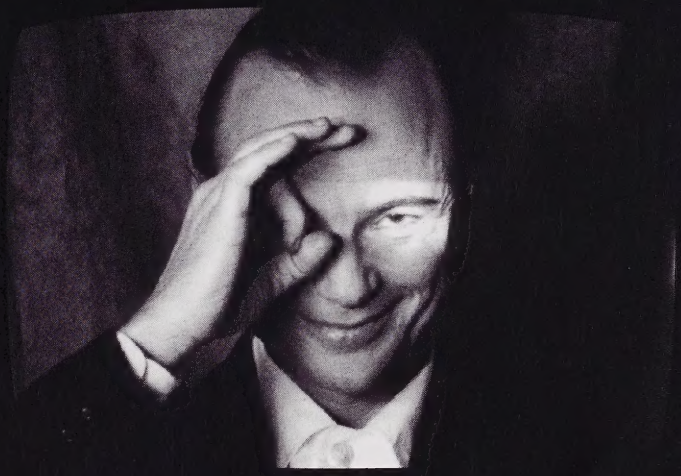
# Crystal Gazing

A MAGNIFICENT HUGE SINGLE CRYSTAL OF GYPSUM IS CONTAINED IN THIS geode from Irai, Rio Grande do Sul, Brazil, an area generally noted for its lovely amethyst geodes. Gypsum can be easily scratched with a finger nail and cleaves readily when hit in certain directions, so it is astonishing to imagine this crystal, measuring 56 × 38 × 28 cm, being mined in one undamaged piece.

Gypsum, a hydrated calcium sulphate, is the main ingredient in plaster. Wallboard or gyprock is essentially processed gypsum sandwiched between two sheets of heavy paper. The ROM is fortunate to have acquired this superb crystal with the support of the ROM Reproductions Fund of The Royal Ontario Museum Foundation.

PHOTOGRAPH BY BRIAN BOYLE

# Q: "Yo Moses, what do you mean by NewStyleArtsChannel?"



# A: "It has to do with what I call Flow.

It means that in addition to carefully chosen, thoughtfully scheduled, predictable program blocks, with which you can make a serious appointment for a half hour, an hour, or two, or occasionally even more, we also want viewers to know that they can check us out on an impromptu basis, for short bursts of the highest achievement. Opera video, Ballet and Dance video, Symphonic, Chamber, Modern music video, Jazz, World Beat, New Age, Architecture, and Museum video...BravoNews...BravoBulletin...tasty and intriguing stuff that will introduce you to new things and make you want more."

Moses Znaimer, President/Executive Producer

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